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# Applying Service Design Methods for Communication and Collaboration of Internal Stakeholders in a Growing IT Organization

Master's Thesis

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**Abstract of master's thesis**

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**Abstract:**

Service design is known for various methods that are facilitating healthy communication and collaboration with customers, however it seems to be difficult to find studies that analyze service design methods improving communication and collaboration within the organization. Therefore, service design methods were applied from a new perspective. The goal of this thesis was to investigate how to improve communication and collaboration of internal stakeholders in a growing IT organization.

Action research was used as the research method in this thesis work. The literature review was conducted to identify suitable services design methods for the empirical study. As a result of the literature review, service blueprint and participatory methods were selected. The empirical study was based on both qualitative and quantitative data collection techniques, such as 36 interviews, a workshop, observations and a survey.

The empirical study revealed that the scope of service blueprint had to be modified to support communication and collaboration between internal stakeholders. Changes mostly affected physical size and accuracy level of the visualization. The participatory workshop was found to be effective for collaboration support. Furthermore, more valuable results would be achieved if workshop arrangements and engagement activities were aligned with the workshop participants.

Service blueprint and participatory methods were found to positively affect communication and collaboration of internal stakeholder in a growing IT organization. These service design methods provided a big picture of the service delivery process. Also, visibility on the processes increased common understanding and eased internal communication in an organization. Furthermore, a healthy communication and collaboration environment was managed. This environment allowed sharing experiences and deciding on improvements regarding organizational processes.

The results of the study indicate that the service blueprint and participatory methods can provide deep understanding of the service delivery process across the organization and support improvement of organizational processes. The findings of this thesis suggest the way service design methods can be applied to improve communication and collaboration of internal stakeholders in a growing IT organization.

**Keywords** service design, communication, collaboration, process visualization, service blueprint, participatory workshop

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Olga Jemeljanova

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# 1. Introduction

## 1.1. Motivation

Some literature exists about service design bringing benefit to the organizational development [1; 2; 3; 4; 5]. Service design is known for various methods that are facilitating cross-functional communication and collaboration with customers [1; 2; 4; 5; 6], however it seems to be difficult to find studies that analyze service design methods improving communication and collaboration within the organization. This aspect of service design can be given more attention. Therefore, service design methods were applied from a new perspective in this thesis.

Improving internal process of the company can be seen as a part of service design [1: 31-32]. It is interesting to apply service design methods in the context of the organizational improvement. The aim of the study is to evaluate service design methods from the perspective of improving communication and collaboration between the units in the organization. Moreover, the motivation of the study is not only to analyze the internal service delivery process but also trigger communication and collaboration between the internal stakeholders in the case company.

Learning about service design methods and their applicability was also a goal of this research. This thesis allowed familiarizing with the service design discipline, understanding its possibilities and boundaries. Furthermore, it was interesting to reveal benefits of service design methods for organizations and discover the suitability of the service design methods for improvement of communication and collaboration of internal stakeholders in a company.

## 1.2. Research problem and questions

A startup growth boom has taken place during past 10 years due to the possibilities technology and the Internet started offering. Furthermore, the service sector has been developing intensively, therefore putting pressure on the companies to rapidly adapt to the changes of the market [7:30]. Currently, there is an enormous amount of job offerings affected by these factors, and it seems like all those startups have grown into middle-sized organizations and their growth continues.

Many difficulties accompany an organization while growing. Those difficulties arise from the inability to adapt to fast changes that come with market expansions, human resources growth, increased income, and operations improvement. One of these difficulties includes the ability to maintain cross-functional communication and beneficial collaboration between internal stakeholders of the company.

Fast growing IT companies usually struggle to create well-functioning internal processes, since there was no need to establish processes in a small startup company. In a startup everyone has to wear several hats and participate in internal discussions, because each member and opinion are important parts of the whole company. Communication and collaboration in such circumstances happens always all the time – it is inevitable. How about 50 people? Or 200?

There are numerous teams and even units, departments and information is spread all around the organization. In larger organizations, there are units that never do work together on daily basis, however they have some overlapping processes in order to serve the customer. It is also more difficult to meet people when company grows, and the cross-functional communication between the employees reduces.

Organizations with poor communication and almost no collaboration between the units fail to become effective in innovation. Moreover, the employees of such organizations have a lot of customer and product/service knowledge that is unutilized for the improvement of the company's processes. Therefore, the research problem of this paper is **how to improve communication and collaboration of internal stakeholders in a growing IT organization**.

Insights from the literature are investigated on service design methods to visualize and improve the organizational processes. The literature review is followed by application of suitable methods from service design in the empirical study. This thesis is expected to find the answer to the research problem. The research questions are as following:

***RQ1: What service design methods can be applied to visualize and improve organizational processes of an IT company?***

***RQ2: How service design methods support communication and collaboration of internal stakeholders?***

## 1.3. Scope of the research

The study case is focusing on one out of two software development teams at the IT company. The focus is on the software development unit that has no direct link to any of the other internal stakeholders. This software development unit is called Knowledge Management. The study is not focusing on the development team that has been recently merged with the continuous service teams. From the beginning of the year Knowledge Management team had a lot more exposure on customer experience than earlier and started collaboration with other units serving the customers. Therefore, the primary focus for the empirical study is to improve communication and collaboration related to the software developed by Knowledge Management unit.

## 1.4. Structure of the research

This thesis consists of six chapters. The chapters are structured into Table 1 based on the relationship to the research questions. First column includes chapters that include findings to support research question 1, and second column emphasizes chapters with findings regarding research question 2. Chapters that provide insights for both research questions are placed in the center of merged cells.

First of all, the introductory chapter presents research questions of this study and guides the reader through the structure of the paper. Research methods and data gathering are presented in Chapter 2.

Table 1. Structure of this thesis from the perspective of the research questions.

<table>
<tr><th>RQ1: What service design methods can be applied to visualize and improve organizational processes of an IT company?</th><th>RQ2: How service design methods support communication and collaboration of internal stakeholders?</th></tr>
<tr><td></td><td>3.1. Introduction to service design</td></tr>
<tr><td></td><td>3.2. Service design benefits for organization</td></tr>
<tr><td>3.3. Service design methods</td><td></td></tr>
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<tr><td colspan="2">6. Conclusions</td></tr>
</table>

The literature review has been introduced in Chapter 3. Chapters 3.3–3.5 seek for the answer to the first research question about the service design methods that could be applied to visualize organizational processes of an It company. The choice to proceed with suitable design methods for the empirical research is also made within the same chapters.

Theoretical chapters are followed by the findings from the empirical study in Chapter 4. The analysis of the results is presented in Chapter 5, and the discussion is followed by the conclusions Chapter 6.

# 2. Research methods

## 2.1. Literature review

Since service design is a relatively new discipline [1:28] and there are not many scientific articles on service design methods, the author shared methods utilized to search and manage the literature materials.

### How to search material

Table 2 presents the most important search keywords for the search that were utilized in order to find literature about service design and its methods. All of the search queries returned a lot of results to select from.

Table 2. Keywords to find literature about service design and its methods.

| Search query order | Search keywords on service design |
|---|---|
| 1. | “Service design” + “Organization” |
| 2. | “Service design” + “Methods” |
| 3. | “Service design methods” |
| 4. | “Service design” |
| 5. | “Service design” + “Collaboration” |

In addition to the article search, books on service design were chosen from Engineering, Business, Arts and Design departments of the library to gain multidisciplinary view on the subject. Further search was organized in a snowball method by going through the references of the existing studies and searching for the original materials based on the topics interesting and suitable for this study.

Table 3 presents the search words for the literature collection on service design methods for visualization and improvement. Not all of the search words provided

results related to service design or its methods. Many studies matched the suitable keywords; nevertheless the content of that literature included little information on the searched subject. Second column of Table 3 includes search keywords used for queries to gather literature on service design methods for visualization, and third column includes keywords to find sources on service design methods for organizational process improvement.

Table 3. Keywords to find literature about service design methods for visualization and improvement.

| **Search query order** | **Keywords on visualization methods** | **Keywords on improvement methods** |
|---|---|---|
| 1. | "Blueprint" | "Workshop" |
| 2. | "Service blueprint" | "Participatory workshop" |
| 3. | "Blueprint method" | "Co-creation" |
| 4. | "Service design" + "Visualization" | "Collaboration service design methods" |
| 5. | "Visualization" | "Communication" |

## How to select material

The approach for selection of the literature was reading the materials through and looking for relations to the topics of this thesis. First the title and the abstract of the found article were read, and then the entire work was browsed through focusing on the interesting facts related to the research in question. Some examples of relevant topics are, for instance, the existence of connection to organizational application, the reason for service design had been application, mentioning or analysis of communication or collaboration.

Another aspect taken into account in the selection of the literature was the publishing year of the resource. Years of the publications were not selected for the same time period to offer a broader understanding of the topic at different years.

### How to analyze material

Analysis of the gathered literature was organized through reading several resources from the selected materials. The collected materials were searched for similar topics, ideas, points discussed. The main points and interesting facts were marked. Also, the similarities between the resources were found, and how these facts were supported by each other was revealed. During the analysis it was also compared if those resources complement with author's understanding and thoughts on the topic.

## 2.2. Case description

The case company is a Software-as-a-Service (SaaS) solution provider in a procurement market. The company faces continuous growth at a fast pace: also the amount of employees has constantly been growing. There are many challenges that an organization faces when growing, both internally and customer-wise. One of the challenges that caught the researcher's interest for this study case was the effectiveness of communication and collaboration within the company units. The situation at the company before thesis work is visualized in Figure 1. Blue arrows represent the information flow between the stakeholders.

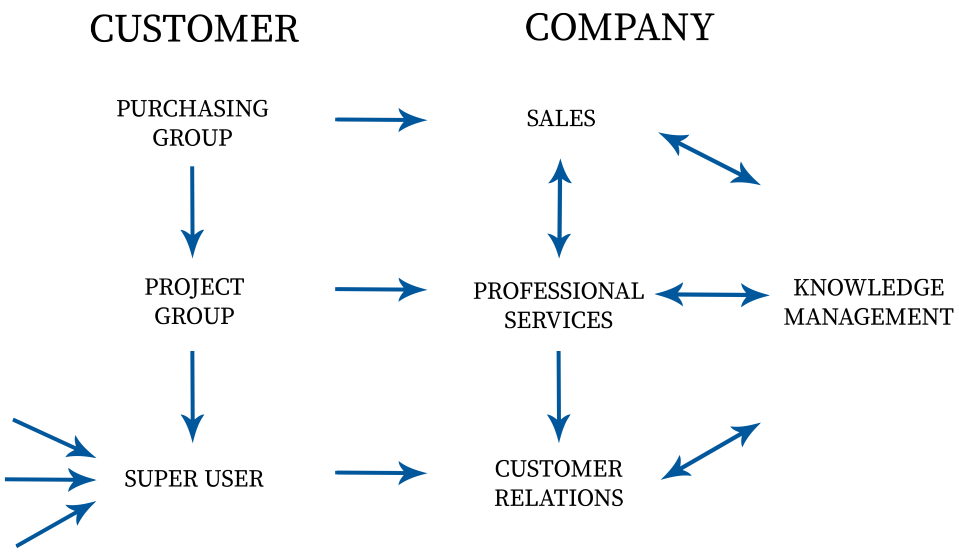


Figure 1. External and internal stakeholder mapping.

Figure 1 explains that a purchasing group is a group of people that represents a customer, when the purchase of the SaaS solution from the case company is negotiated. These negotiations happen with the Sales unit of the company, which is represented by the sales and pre-sales employees.

Later, when the contract has been signed between the parties, Professional Services unit takes over the customer to implement the solution for the customer on an agreed timeframe. The implementation project has new faces both from the customer and the company side. From a customer side, a project group includes people related to the integration of the service, for instance, category managers and IT specialists, represents customer. From the service provider side there is a representation of a project team that normally consists of 5-6 members. Professional Services unit consists of project teams each responsible for the dedicated projects.

When the implementation is done, the client is facing a new person from Customer Relations unit. A Customer Relations manager is responsible for the customer during the maintenance of the purchased service. Often a project manager from a customer project group becomes later a super user of the purchased service. A super user is a person who contacts and is contacted by the service provider in case of any related issues.

Software development unit, also known as Knowledge Management unit within the company, has software engineers that are responsible for the continuous development of the software that is sold to the customer. Since there are three parties (Sales, Professional Services, Customer Relations) that have direct contact with the customer at different stages of the service lifecycle, customer related information is spread along the organization. Moreover, the most important information from the customer that could have had effect on the development of the product is not reaching the right team.

Currently, there are no common practices or methods that endorse communication between the units at the case company. This means that there is no space left for effective collaboration and innovation within the company. Consequently the adaptability of the product to the needs of the customers is extremely slow.

The case company has recently implemented the organizational structure change and there is time to adjust the company practices before the organization grows too big. Therefore, it seems as the most suitable time to address cross-team communication and collaboration processes and practices.

## 2.3. Research process

Action research was used as the research method in this thesis work. Action research embodies many benefits both from the theoretical and practical point of view. First of all, action research was found to be applicable in the problem areas that concern complex issues [8; 9]. Complex issues could be the ones that are difficult or impossible to define [8; 9], relate to social aspects [8; 10]. Since communication and collaboration tend to have no one right solution and these are highly social matters, these could be considered as complex issues. Action research was found to be a resolving research method for social issues that organizations face [8; 10]. Therefore, action research method was identified as a suitable choice in order to make the statement whether service design methods are appropriate to improve communication and collaboration within the IT organization.

Action research is a type of research that stresses the importance of receiving the practitioners' comments during the research and adjusting the theory accordingly [8]. This type of approach is extremely close to service design, where end users of the service are actively participating in the service development. The findings of this research relied heavily on the feedback of the case company employees alongside with the theory. It is presented later in this chapter that each stage of

the research process was followed by a throughout analysis of the employees feedback (also seen in Figure 2). As Baskerville stated in his work in 1997, action research could be described as collaboration and learning development [10]. These two activities affect the research and keep the iterative cycle growing until it matures [9]. Moreover, active participation of the employees in the research allowed increasing communication and collaboration of internal stakeholders in the case organization.

In case study, research focuses on what experts from an organization tell they do, however interest of this research is on what they really do [8]. Therefore interventions were organized to gather observations on how collaboration and communication of the internal stakeholders improved and how the interaction between the employees developed. In addition to the theory, prior knowledge about the company, its culture, and ways of working with the customers supported the selection of the methods.

Susman and Evered believed that a five-stage process was necessarily for an extensive action research implementation [10]. Such process consists of diagnosing, action planning, action taking, evaluating, and specifying learning stages [10]. Nonetheless, in the same research paper they agreed that the amount of phases might vary depending on the research case [10]. The research process of this study followed the structure introduced by Avison et al., consisting of three stages: problem diagnosis, action intervention and reflective learning [8]. A three-stage process was considered to be suitable for this study because two stages were performed simultaneously with other activities. Planning stage merged with the literature review and was executed before and during problem diagnosis stage, and evaluating was done as an integrated step of analysis during each research process stage. Figure 2 presents the detailed structure of the empirical study.

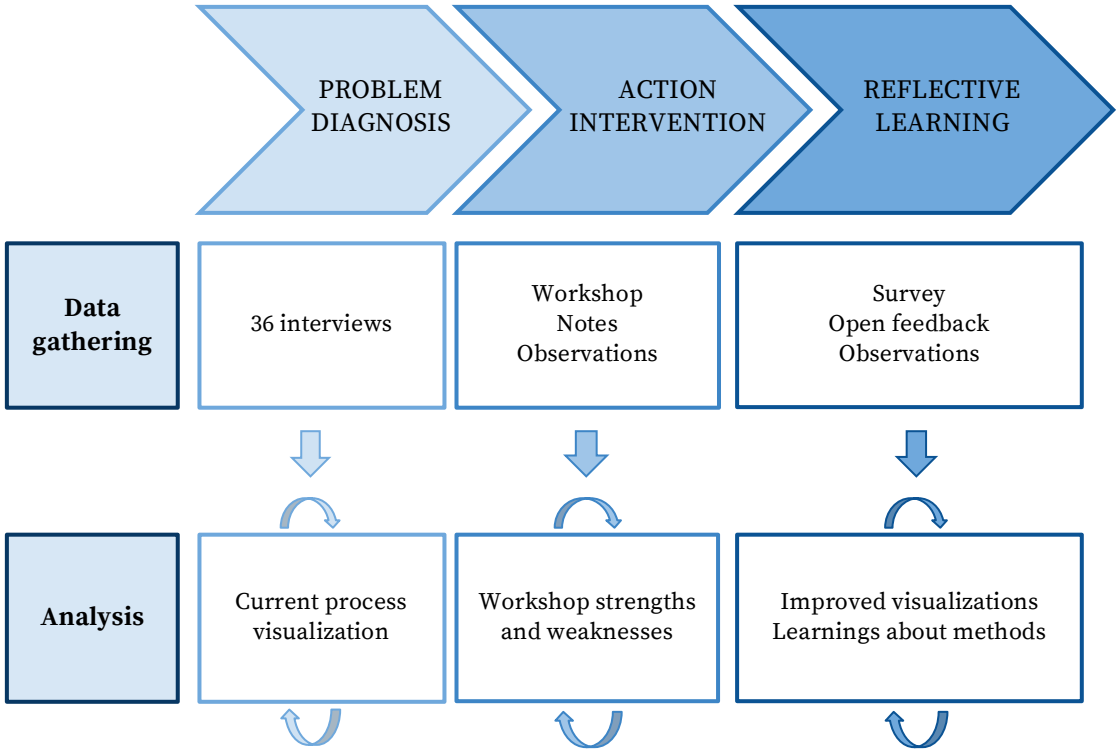


Figure 2. Detailed view on the research process of this thesis.

Each stage of the research process had its own set of data gathering and analysis. Data gatherings were executed in one round, and analyses at each stage of the process were performed in an iterative manner. Figure 2 explains that this research combined different data collection methods: qualitative (interviews, workshop, notes, open feedback, observations, passer-by comments) and quantitative (survey). Analysis, as an integrated part of each stage, always supplied the next stage with the data. The whole research process had one iteration. More about each action research process stage in the next chapters.

### 2.3.1. Problem diagnosis

For the first stage of the research process – problem diagnosis – 36 interviews were conducted in order to visualize the current internal process at the case company. The interviews were held with all the internal stakeholders involved in

the process of delivering a solution to the customer: starting from selling the solution and ending with the continuous service provided by the company.

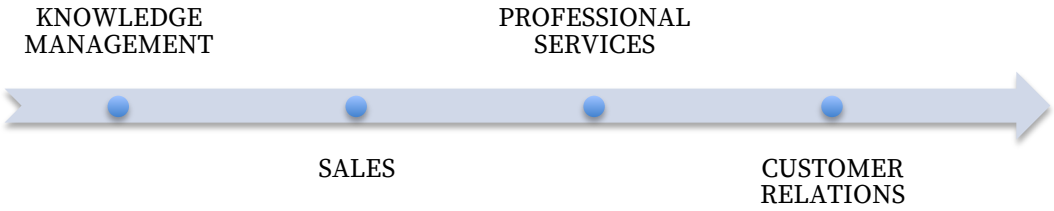


Figure 3. Interview order by company units.

The interview order of company units is seen in Figure 3. Before the interviews the researcher requested the information about the product modules from Knowledge Management team and continued with the first interviews within the same unit to increase technical understanding in the upcoming meetings. After Knowledge Management, teams were interviewed in a logical order of a solution purchaser: Sales, Professional Services, and Customer Relations. The internal stakeholder group consisted of 4 units in total and their interview summaries are presented in Table 4.

Each unit was asked to explain closely their part of the process and area of expertise. The interviews were semi-structured and the blueprint of the chosen prototyping method was used to make the notes of the respondents. The interview questions were used as the interview basis but were not strictly followed. The questions from the list of guiding questions were used according to the need. The questions were slightly adjusted after the first interviews. The finalized interview questions are presented in Appendix A. The questions were not presented to the interviewees before the actual interviews, however the meeting invitation consisted the information about the topic of the interview and its scope. The length of the interview was half an hour, since the researcher was interviewing work colleagues no require extra time was required to get to know

the person. Moreover, the environment (workplace) and the topic (internal process) were supporting the discussion to start almost immediately.

Table 4. Interviewed employees from the case company.

| Unit | Amount of persons | Interviewee job title | Working at company (years) |
|---|---|---|---|
| Product | 1 | Head of Knowledge Management | 0,5 |
| Product | 1 | Product Owner | 2 |
| Product | 1 | Lead Software Engineer | 7 |
| Product | 4 | Senior Software Engineer | 2-6 |
| Product | 1 | Quality Assurance Engineer | 0,5 |
| Sales | 1 | VP, Sales; Co-founder | 14 |
| Sales | 3 | Head of Business Development | 0-4 |
| Sales | 1 | Head of Presales | 4 |
| Sales | 2 | Presales Specialist | 0-3 |
| Professional Services | 3 | Project Manager | 2-11 |
| Professional Services | 2 | Senior Solution Consultant | 6-11 |
| Professional Services | 1 | Senior Integration Consultant | 7 |
| Professional Services | 4 | Integration Consultant | 1-2 |
| Professional Services | 1 | Development Manager | 6 |
| Professional Services | 3 | Solution Consultant | 0-2 |
| Customer Relations | 1 | VP, Customer Relations | 3 |
| Customer Relations | 7 | Manager | 0-4 |

The outcome of the interviews was a process prototype that was utilized during the workshop as the presentation of the current situation at the company. Therefore, all 36 sketches of service blueprint with individual notes were analyzed iteratively in numerous rounds to detect patterns and similarities.

### 2.3.2. Action intervention

In the action intervention phase, the researcher organized a workshop around the findings from problem diagnosis stage of the research process. The current process blueprint was presented and analyzed with the participants of the workshop. Collaboration with the case company employees was essential in order to modify the prototype of the current internal process of the company.

During action intervention the second round of qualitative data was gathered from the workshop. The researcher was in a facilitator role and took notes about the discussions and observations during the event. The facilitator's notes and observations about the content of the workshop and the applied intervention method were gathered in a written form. In addition, the process visualization had been updated and improved in several iterations after the workshop.

### 2.3.3. Reflective learning

During the workshop the survey was filled to provide quantitative data alongside with the gathered qualitative data. 6 persons filled out the feedback survey. Additionally, the facilitator took notes of the participants' open feedback, personal observations, and passer-by comments. The combination of different data sets was accumulated to provide alternative angles to the third research question of this study: How service design methods support communication and collaboration of the internal stakeholders? Quantitative data was analyzed numerically and conclusions were drawn accordingly. Qualitative sets of the gathered data were analyzed both separately and collectively in an iterative manner.3. Literature review

# 3.1. Introduction to service design

## 3.1.1. Service design as discipline

### Definition

Browsing through the literature, it could be stated that service design fails to have one exact definition, and there are several reasons for that. One reason is certainly the fact that this field has merged from different disciplines and is still quite young [1:28]. Second, there are different interpretations of service design depending on the person asked about it. The interpretation varies due to diverse backgrounds of individuals involved with service design [6:2-3; 7]. These backgrounds might include, for example, interaction design, marketing, urban planning, user experience, industrial design, business, financial management [11].

Various definitions of service design are provided by specialists from different industries and backgrounds [6:2-3; 11]. Those specialists have their individual views, understanding and experience. Therefore, it could not be stated that there is a completely right or wrong definition. Due to this reason, several examples of definitions are presented further.

“Service Design helps to innovate (create new) or improve (existing) services to make them more useful, usable, desirable for clients and efficient as well as **effective for organisations**. It’s a new holistic, multi-disciplinary, integrative field.”

Stefan Moritz, 2005 [1:31].

“Service design is a design specialism that helps develop and deliver great services. Service design projects improve factors like ease of use, satisfaction,

loyalty and efficiency right across areas such as environments, **communication** and products – and **not forgetting the people who deliver the service**."

Engine Service Design, 2010 [1:32].

"Developing the **environments**, tools, and processes **that help employees deliver** superior service in a way that is proprietary to the brand."

Continuum, 2010 [1:32].

These three definitions of service design were selected from the perspective of presenting the important points for this study: communication and collaboration improvement of internal stakeholders in an organization. These definitions not only talk about service design as a way to create usable, efficient services but also mention the importance of the employee environment in a delivering organization [1:31-32]. Environment of the service creators strongly relates to the communication and collaboration of internal stakeholders in an organization, which is the main topic of this research.

Many authors present service design as a way of thinking and working [1; 2]. Tuulaniemi explains that service design created a common language for collaboration between different fields through the set of methods and processes [2]. Although the common interpretation of service design is to create or improve services, Tuulaniemi's view on service design supports hypothetical possibility of applying service design methods and processes in the improvement of communication and collaboration between teams and units in the organization [2].

The service design literature concentrates a lot on creation and improvement of services involving customers [1:107-115] and the business models possibilities influenced by service design thinking [1:94-107]. However, the current literature fails to analyze the utilization of service design methods to improve the environment of the company employees.

## History

Robert Curedale believes that specialists had done service design long before service design was defined and that its development is linked to design thinking [6:4]. He gathered a list of dates starting from 3rd century BC, when Porphyry of Tyros used mind mapping technique to arrange Aristotle's works [6:4-5; 12]. Mind mapping is widely used to organize ideas with the connections [6:57; 12], and its use is not limited only by designers. In service design, this method is used to support different activities and processes, such as familiarizing with the user and the context, defining and exploring ideas [6:57].

Service design discipline had adapted many methods that apply design thinking. Therefore, it is not surprising that there are difficulties to define the invention of service design as a discipline. Several important dates in 20th century could be still defined to have influence on the birth of service design as a discipline. Since 1991 service design has been developed as a separate approach, however it had it start way before being recognized as a separate expertise [6:7].

In 1982 Shostack proposed a concept for service design called service blueprinting [3]. Lynn Shostack could has been referred to in numerous articles in the history of service design, since she wrote the first article to explain the need for a design method for services due to the difference between products and services and their visualization [3]. She also revealed service design application in the way it is perceived until nowadays.

In Shostack's article (1982), she explicitly described that one could know how the process potentially has to happen, but in reality the actual interpretation of the service is a deviation of the potential process [3]. This lead to the invention of the first purely service design method – service blueprinting – which was created from a combination of methods inspired from time/motion or methods engineering, PERT/project programming, and computer systems and software design [3].

Only in 2001 the first service design business was founded, followed by the creation of The Service Design Network three years later by five universities [6:8]. The Service Design Network was established to unite people involved with service design and still continues to pursue its goal [6:8].

In 2005, Edvardsson, Andersson and Roos from Service Research Center in Sweden investigated the concept of service [13]. Their research proposed to describe service from the perspective of value creation rather than perceiving service as something different to product [13]. It means that a service could be perceived differently depending on the stakeholder who is participating in it [13]. Service provider can have different needs and expectations compared to the customer [13]. Nevertheless, Edvardsson et al. suggest to always consider customer perspective in service description [13]. In this thesis, the aim was to focus on the service delivery from the perspective of company internal stakeholders, and the value this service provided was successful communication and collaboration between the company units.

### 3.1.2. Principles of service design thinking

Marc Stickdorn succeeded to create a common understanding of service design in 2011 by describing five principles of service design thinking [1:34-45]. This allows each professional to have their own interpretation of what service design definition is provided that the main principles of service design remain. The five principles are: user-centered, co-creative, sequencing, evidencing, holistic [1:34-45].

#### User-centered

The main purpose of the service is to fulfill customer expectations and as a consequence increase the use of the service and the amount of genuine endorsements [1:34]. Deep understanding of the potential customer's individual

details, such as lifestyle, habits, hobbies, routine, background is required to familiarize with the end-user. Nevertheless, deep understanding of the customer persona could be gained by additionally revealing the genuine needs, motivation, and perceptions of the end-user [1:34-35].

Deeper understanding of the end-user could be achieved through methods service design has to offer [1:34-35]. Often also industry-specific knowledge has to be collected in order to increase understanding of the customer behavior [7:38].

### Holistic

Numerous alternatives exist when it comes to the actual interpretation of a service, thus testing of different approaches is vital [1:44-45; 3]. For instance, mood and feelings of a customer can be mapped to enhance the service experience [1:44-45]. It was mentioned earlier that service design is user-centered, but it also considers other stakeholders, including the organization of the service provider. Organizations vary by particular working ethics, people, structure, culture, values, processes and many other differences [1:44-45]. Furthermore, service design also includes in its scope systems involved and relationships created with those systems [7:37-38].

Service design has to be interdisciplinary in many cases, since it has to include collaboration with different company units, and sometimes external experts as well [7:37-38]. To conclude, service design thinking is holistic – the whole environment around the service is taken into account.

### Co-creative

In reality, there are always numerous customers with various needs and expectations instead of one service user [1:38-39]. Since service design is holistic [1:44-45; 3; 7:38], various stakeholders also need to be considered and involved in the service design process [1:38-39]. Service designers organize with the help of

service design methods an environment that supports idea generation and collaboration [1:38-39]. Such environment facilitates co-creation in the stakeholder group, and improves communication between the stakeholders [1:38-39]. Co-creation allows creating the value of the service offering together with the customer through deep understanding of the customer, the environment and the industry [7:38].

### Sequencing

Service is a process that consists of activities or smaller processes that happen over time [1:40-41; 3; 4]. Hence, services could be visualized as a sequence of connected actions [1:40-41; 3; 4]. Furthermore, time influences service as well, since certain processes are not perceived positively if they happen too slow or too fast [1:40-41]. In order to achieve great customer experience, several prototypes and tests have to be completed [1:40-41]. Sequencing strongly relates to prototypes, because only through visualized process users are able to test and provide feedback about the service.

Alternatively, Mager points out visual thinking as a separate principle of service design [7:38]. Indeed, presentation of the big picture is achieved through visualization of the service. Nevertheless, sequencing achieves similar results through dividing the entire service into a process of sequenced activities, which is visualized.

### Evidencing

Emotional association with physical evidence tends to be the reminder of a service experience, like a souvenir from a trip reminds of those moments [1:42-43]. Stickdorn believes that service experience gets prolonged thanks to the physical evidence [1:42-43]. Moreover, such piece of memory could even last until post-service period and increase the chance of endorsements as well as customer loyalty [1:42-43].

Mager states that evidence creation is included into service design role [7:36]. Despite that, Stickdorn realizes that the evidence is not always wanted, however it reveals to the customers a piece of backstage happening that could bring more joy and appreciation from customers [1:42-43]. For instance, movie series fans are extremely happy and excited if they are shown some materials on making of the series. Such materials reveal how much effort and thought had been put into the series that would not be otherwise noticed, and this way learn to appreciate the work even more.

In conclusion, there are five principles that describe service design thinking [1:34-45] and these are the basis for the service design methods applied when creating or improving services. Service design thinking is user-centered, holistic, co-creative, sequencing, and evidencing [1:34-45]. These principles are also applied through the chosen service design methods in this thesis to improve communication and collaboration of the internal stakeholders in a growing IT organization.

## 3.2. Service design benefits for organization

The application of service design could be seen also within the businesses. Tuulaniemi described in 2011 the rising importance of designing services where values of the customer and the service provider organization could be balanced and linked together [2:95]. Currently, this is the only way companies strive to design their services. Nowadays organizations communicate openly about their services being user-centered, which is the core principle of a service design. This also explains a rising success of service design consultancies and increasing amount of service designer position openings.

Nevertheless, the benefit of service design in business is not limited to the services that companies provide their customers. Tuulaniemi mentioned the advantages of service design applied in strategic direction of organization, focusing operations to customer-oriented, improvement of organization internal

processes, deepening brand and customer relationship, new and existing services development [2:95-100]. Furthermore, Jungiger stated that service design should not be treated as a separate activity but it should be embedded into design practices, methods and approaches of an organization [5]. In 2015, her research revealed there are various organizational benefits of service design, such as collaboration and engagement enhancement, improving organizational processes for business success, new opportunities [5]. However, Jungiger's main point was that the benefits could be reached in case the organization and the service designer both are dedicated to understand and change the design approaches company already has in place [5].

A closer look at the organizational benefits of service design is presented further. Table 5 introduces main benefits for organizations divided into three colored categories based on the origin of the benefits. Furthermore, these categories could be viewed from the perspective that orange category benefits lead to the benefits of yellow category, and yellow column leads to the benefits of green category.

Table 5. Organizational benefits of service design.

| **Benefits coming from core principles of service design** | **Benefits coming from immediate actions** | **Benefits coming from sequence of actions** |
|---|---|---|
| Bringing deep understanding of customers, service provider and entire service environment [1; 2] | Locating brand message in the right touchpoints with the customer [2] | Creating deeper attachment with brand, service, and service provider [1; 2] |
| Creating communication and collaboration environment [1; 5] | Developing new services that meet needs and values [2] | Setting strategic direction of organization [2; 5] |
| Visualizing service as a sequenced process [1; 3; 4] | Improving organizational processes [2; 5] | Developing existing services [1; 2; 3] |

### Benefits coming from core principles of service design

Orange column of Table 5 includes three benefits that could be directly related to the core principles of service design thinking presented in the previous chapter. These principles are user-centric, holistic, co-creative, and sequencing.

Service design offers methods to bring deep understanding of customers, service provider and entire service environment. One of the first tasks in any service design project is understanding the target customer through interviews and other various methods. In addition to user-centric [1:34-35], service design is also holistic [1:44-45]. Service design deeply understands the customers and the employees of the service provider, including the entire service environment [1:34-45; 2:97].

Creation of communication and collaboration environment is successful through a range of service design methods. A suitable method or a group of methods is chosen to facilitate a dialogue between a group of customers, all of the stakeholders, or a different group of participants according to the need [1:38-39]. Co-creation could be achieved also within the internal stakeholders. By creating an environment for communication and collaboration, service design methods could support idea generation of the employees in the organization [1:38-39]. Service design methods could be also applied for the purpose of communication and collaboration enhancement [5], thanks to their facilitative nature.

Service design methods visualize service as a sequenced process [1:40-41; 3; 4], thus providing a coherent view of the service with needed details to all employees of the organization. In practice, visualization of the sequenced processes and stakeholders included in the process support company in their further actions and decisions. These actions are also beneficial to the organization, thus some of these actions are presented in the yellow category (Table 5).

### Benefits coming from immediate actions

Yellow column includes three benefits that an organization would face after immediate actions. Immediate actions stand for the first activities implemented during a service design process, such as the ones mentioned in the orange category previously.

As soon as customer touchpoints are detected or there is a vision of the service as a process, it is a lot easier to find suitable location for the brand message. Also, through facilitated dialogues finding could be made to introduce the options for channels and customer touchpoints to locate the brand message of the service provider [2:99]. Such improvements lead to a bigger business success in the future.

One of the most praised organizational benefits of service design is developing new services that meet needs of the customer and values of the business. Service design methods offer methods to understand customers, reveal their real needs, and visualize the future service [2:100]. After understanding customer and its needs, organizational processes are also set to meet the company values [2:97]. The success of new products and services is approved with service prototypes and testing [2:100]. The five service design thinking principles ensure that the new service meets the real needs and is beneficial to all stakeholders.

Since the service provided should meet real needs of the customer, quite often the internal processes of the organizations need to be adjusted [2:97], optimized [5], or created from scratch. Tuulaniemi described numerous benefits of service design for improvement of internal processes at the company. These benefits include, for example, development of the innovation processes in the organization, improvement of the organization structure to support employees in the customer service [2:98]. Furthermore, reduction of the research and development investments if the service design thinking is applied from the beginning of the process [2:98]. Also, the service is thoroughly understood and

tested before production investments are realized [2:98]. Service design introduces methods to understand customers of the service provider, especially visualizations serve as common language between various stakeholders [2:98], also within the company. Overall, improvement of organizational processes leads to business success [5], since the company is working more efficiently.

### Benefits coming from sequence of actions

Green column of Table 5 presents organizational benefits that company experience in case of action sequence has been applied. Here, sequence of actions refers to several actions from service design process. Moreover, there actions over time have increased understanding of the customer, the service provider and the service environment so that the findings serve for long-term organizational benefits.

Such benefit as creating deeper attachment with brand, service, and service provider cannot happen overnight – many actions have to be taken first. For instance, co-creation activities involve customers more with the service and the service provider [1:38-39], therefore increasing the attachment with the brand and building the relationship with the customers. A dialogue between the customer and the company establishes brand value of the company [2:99]. Service design facilitates the dialogue between the customer and the company through creation of communication and collaboration environment with the help of the service design methods [1:38-39]. Moreover, service design introduces the options for channels and customer touchpoints to locate the brand message of the service provider [2:99]. And all of these beneficial actions need to be taken in order to have customers attached to the brand and cherish their relationship with it.

Strategic direction of organization could be set when a deeper understanding of the customer groups is received [2:96]. This allows a company to create services that bring strategic value to the business [2:96]. Through service design the real end-user needs are revealed and the company should act upon the findings [2:96].

The information received with the help of service design provides possibilities for organizational strategy [2:96-97]. Since service design considers business goals of the service provider, it also has effect on the strategic choices of the company [2:96-97]. Service design could also reveal new opportunities for the business [5].

Businesses continuously need to improve their services. Since service design is holistic [1:44-45; 2:99], the whole environment of the service could be visualized to find the points for improvement [2:99]. Service sequencing allows concentrating on the optimization of specific elements and activities of the process [1:40-41; 2:99; 3]. Through continuous improvement of both external and internal processes, the organization has higher chances to stay competitive on the market corresponding to the changing customer needs.

An organization should design services that meet customer needs and company values as well as adjust the organization and its processes to meet various constraints, such as time, finance, satisfaction etc. Service design offers a set of methods that provide aid in understanding these needs and values to develop the right offering. Communication and collaboration of internal stakeholders in an organization could be also improved with service design methods. Service design affects internal processes of the service provider and facilitates healthy internal and external dialogue between all stakeholders. These and many more benefits introduced at all stages of service design process have positive effect on both customer and company [2:101-107]. In the end, customers are satisfied and the organizational targets are fulfilled as well, and that could be perceived as a successful service [2:101-107].

## 3.3. Service design methods

### Categorizations of service design methods

There are plenty of service design methods to select from, and service designers need to analyze the situation to decide on the method that would be suitable for a particular case. To provide aid for the designers in their decision-making, service design methods are actually gathered into structured sets by professionals and organizations. Different structured sets of service design methods are presented further (Table 6). Since the basis for categorizing differs by the creator, one column presents one categorization set with possible sub-categories.

According to **Stickdorn**, service design could be presented as an iterative process of four stages: exploring, creating, reflecting, and implementing [1:120-135]. In the same categories service design methods are presented in the first column of Table 6. Co-authors of the book described that exploring methods are meant to discover customer insights about the service [1:149]. Creating and reflecting methods intend to increase the amount of participants in the process [1:149]. Creation happens through visualization, and reflection happens through testing created prototypes [1:149]. Implementation methods help to spread service design within the organization [1:149]. These methods reach to all stakeholders, specifically focusing on the internal stakeholders (employees) and making the change appealing for them [1:149]. It could be stated that the first categorization of service design methods guides the choice of methods relying on the type and the purpose of the design process.

Table 6. Different categorizations of service design methods.

| Creator of the service design method category set | **"This is service design thinking" by Stickdorn, Schneider [1]** | **Method Cards by IDEO [14]** | **"Service design: 250 essential methods" by Curedale [6]** | **"A taxonomy of innovation" by Luma Institute [15]** | **Categorization by Tassi [16]** |
|---|---|---|---|---|---|
| Service design methods category tree | - Explore<br>- Create & Reflect<br>- Implement | - Learn<br>- Look<br>- Ask<br>- Try | - Define the intent<br>- Frameworks<br>- Know people and context<br>- Explore ideas | - Looking<br>  - Ethnographic research<br>  - Participatory research<br>  - Evaluative research<br>- Understanding<br>  - People & Systems<br>  - Patterns & Priorities<br>  - Problem framing<br>- Making<br>  - Concept ideation<br>  - Modeling & Prototyping<br>  - Design rationale | - Design activities<br>  - Co-designing<br>  - Envisioning<br>  - Testing & Prototyping<br>  - Implementing<br>- Representations<br>  - Texts<br>  - Graphs<br>  - Narratives<br>  - Games<br>  - Models<br>- Recipients<br>  - Stakeholders<br>  - Professionals<br>  - Service staff<br>  - Users<br>- Contents<br>  - Context<br>  - System<br>  - Offering<br>  - Interaction |

**IDEO** design company has provided service designers with method cards [14] that explain methods and support designer's understanding by IDEO's own categorization. The categories are learn, look, ask, try [14], which could be compared to the logical steps of the design process. If analyzed, learning and looking happens in the exploring stage, asking is done in reflection stage, and trying is the creation and implementing. Thus, this categorization is quite similar to the first categorization of service design methods, reminding the service design process interpretation by Stickdorn.

A third column of Table 6 relies on the book by **Robert Curedale** where he presented 250 service design methods [6] and organized those according to his logic. Curedale's categorization of methods was affected by his interpretation of a service design process, which differs slightly from Stickdorn's interpretation. Curedale sees a service design process in such stages: defining the vision, knowing the people and their context, framing insights, exploring ideas, prototyping and iterating, and implementing [6].

Compared to the four stages by Stickdorn, similarities are seen. It could be perceived that defining the vision, and knowing the people and their context are a part of the exploring stage of the service design process. Next, frameworks could be utilized in creation phase to visualize the findings. Exploring ideas in a group of people could happen either during creation or reflection stage of the process. Also, methods for knowing people and context could be utilized in the creation, reflection and implementation stages due to their content capacity.

Most of the 250 service design methods gathered by Curedale are in the category of knowing people and context [6]. On the one hand, service design is about understanding the end-users and the whole environment around the service [1:34-45], therefore it is natural that the majority of the service design methods serve this purpose. On the other hand, the category of knowing people and context could be considered slightly vague, due the amount of various methods included that could serve at different stages of the service design process.

Additionally, **Luma Institute** has done a research on innovation and selected the most effective methods for revealing user needs and fulfilling their expectations [15]. A set of 36 design methods was organized to support fast design of new products and services [15]. The logic in this set is found to be similar to the previous organized sets of service design methods. Since the stage of looking represents discovering experience of the people [15], it could be compared to the exploring stage in the first column of Table 6, based on service design method categorization from Stickdorn.

Looking stage includes such sub-categories as ethnographic research, participatory research, and evaluative research [15]. Understanding stage is about careful analysis and transforming the findings into the concepts [15], which are the actions related to creating and reflecting in the service design process by Stickdorn [1:149]. This category includes such method groups as people and systems, patterns and priorities, problem framing [15]. And finally, making stage methods support executing of the concepts [15], which could be interpreted as implementation phase respectively in Stickdorn's service design process. Making category includes concept ideation, modeling and prototyping, and design rationale sub-groups [15]. In sub-categories of Luma Institute's taxonomy some similarities could be found with sub-grouping of Roberta Tassi (see Table 6).

Alternatively, Servicedesigntools.org presents a more detailed categorization of service design methods. Servicedesigntools.org website was initially created based on the research of **Roberta Tassi** [16]. Tassi organized service design methods by four main categories, depending on design activity, representation, content, and recipients of the service design process [16].

Design activity category involves co-designing, envisioning, testing and prototyping, and implementing methods [16]. This categorization level is similar to the previous one from Stickdorn and Schneider's book [1:149], where methods are grouped depending on when in the service design process those are suggested to be utilized. Second category divides methods based on the type of representation, such as texts, graphs, narratives, games, models [16]. Recipients category provides aid for selecting a method based on group of people that is approached: stakeholders, professionals, service staff, or users [16]. And contents category presents options to express context, system, offering, or interaction [16]. Therefore, such aspects of involvement in the design process as when, how, who and what could be considered to support the selection of a suitable service design method accordingly [16].

The next chapter provides deeper analysis of the differences and similarities of the found service design method categorizations. This way, various categorization sets would be understood profoundly and the selection of service design method categorization could be performed.

## Differences and similarities of different categorizations

As described earlier, Stickdorn's service design process presentation [1:149] has been noticed as a basis of several method categorization sets. Stickdorn himself divided service design methods into three categories, combining creation and reflection methods into one category [1:149]. Then IDEO company presented a almost same structure in their categorization staying with the four steps of process and service design methods referring to each of the steps. In addition, a similar layout is seen in Curedale's categorization where, however, frameworks are seen as a separate set of methods. Luma Institute includes a close structure to the previous categorizations, nevertheless offering a more extensive structure offering two levels of categories. This allows a professional to go deeper into the activities of a service design process to decide which are the suitable methods.

So far each categorization set has been broader than the previous one and leading to the most far-reaching service design method category presentation by Roberta Tassi. In this set not only the process is dividing methods into four categories, like in the previous categorizations, but also other aspects are strengthening the suitability of the method to the situation. Since there are four different higher-level categories, there four different options under each higher level to narrow the selection to. These categories could be perceived as selection criteria because of their variety and possibility to combine several category choices at once. Other service design method categorization sets cannot be seen as selection criteria because all of them follow a service design process structure, where for instance, a type of audience has effect on the categorization.

To summarize, there are various ways to group service design methods into structured sets, nonetheless a common path is found in all of them. If the service design process was presented in four stages, its methods would be most probably selected according to the process stages. There are also more detailed sets that offer sub-categories to choose from, which provide great support for service designers that would like to focus on certain elements of service design. For instance, sub-categories of recipients by Roberta Tassi force to question the choice of the method and rethink its suitability for the audience.

All in all, there is no difference how the service design method has been chosen, until the service design method serves the purpose it was selected for. In service design, there are no strict rules on the application of methods. Experimenting on the service design methods is acceptable, and the methods could be used in any combination, since different cases will have a different mixture of methods suitable [1:148; 15]. Therefore, the above-presented categorized sets of service design methods should be used for guidance and support, not like a strict manual.

The next two chapters aim to answer the first research question with a literature review on the subject of service design methods that can be applied to visualize and improve organizational processes of an IT company. At the beginning of this chapter in Table 6 the selected categorization set is marked in yellow. Tassi's categorization of service design methods [16] is selected to support the further research, since communication and collaboration are the main aspects in this study. This service design method categorization set includes not only the categorization based on the process stages but also inspects three other aspects in service design, therefore providing a deeper analysis and supporting a more accurate choice for this case. Suitable sub-categories from Tassi's categorization [16] are further referred to as criteria for method selection, since chosen types of sub-categories set limitations to the amount of service design method options to select from.

## 3.4. Service blueprint for organizational process visualization

### 3.4.1. Reason for method selection

In order to choose a method for visualization of organizational processes with the stress on communication and collaboration, a set of service design methods needs to be analyzed accordingly. As mentioned in the previous chapter, service design method categorization by Tassi is utilized in this research due to its deep level of sub-grouping.

The criteria for a service design method that would concentrate on communication and collaboration during the internal process of a company are seen in Table 7. Representation type of graph is the most natural way to visualize a process. Interaction content shows the aspects of communication and collaboration between the stakeholders. System content has importance if the visualization has to show the technical aspects of the process. Implementing stage of the design activity allows choosing from a range of methods that communicate the idea to the audience and would support further actions. And recipients category of service staff would be the suitable one for the internal company use, however this category includes only one method for the process visualization. Offering map method was not selected as a potential method in any previous category, therefore a recipient group of stakeholders was analyzed.

Table 7. Visualization service design methods organized in suitability order and by the selection criteria.

| Suitability order | Represen-tations: Graphs | Contents: Interaction | Contents: System | Design activities: Implementing | Recipients: Stakeholders |
|---|---|---|---|---|---|
| **1.** | Blueprint | Blueprint | Touchpoints matrix | Blueprint | Blueprint |
| **2.** | Touchpoints matrix | Touchpoints matrix | Actors map | Service prototype | Touchpoints matrix |
| **3.** | Customer journey map | Storyboard | System map | Task analysis grid | Customer journey map |
| **4.** | Actors map | Customer journey map | | | Evidencing |
| **5.** | System map | Evidencing | | | Actors map |
| **6.** | | | | | System map |

Table 7 presents the service design methods that could be potentially used in the company, according to their purpose. Indeed, the purpose of using several criteria was to identify one service design method that would meet all of the criteria. To succeed in this task the methods had to be organized in suitability order. It was done so that one selection criterion was analyzed at a time. Familiarization was done with each method that was suggested on the website under the picked criterion, and only the most suitable ones were included into Table 7. In total, there are nine methods in Table 7. Each of the service design method is shortly presented further to provide the reader some understanding about the presented options for visualization methods.

Blueprint, also known as service blueprint, represents several layers of actions and stakeholders that are involved with the service. Touchpoints matrix represents a customer path in the service with the focus on the technical aspects [16]. Customer journey map is a service design method that visualizes on a customer path within the service by marking customer's interactions with the service [16]. Actors map provides an organized view of actors and their

relationships [16]. This method allows having an organized picture of the service environment [16]. System map is similar with actors map, however it concentrates on the technical aspects associated with the technical aspect of the service [16]. Storyboard is a set of use cases shown as drawings or images [16]. These images are place in a sequence to explain the service as a story [16]. Evidencing is a method to produce images to discover how a certain touchpoint of a service would function [16]. Service prototype is a method to test the service with a real user in a real situation to get feedback [16]. Task analysis grid is a method to represent tasks or requirements of the service with sub-tasks related to each of the description [16].

As seen in Table 7, blueprint method suited all of the categories, except system content. Moreover, it has been the top choice for most of the columns. And touchpoint matrix met all criteria, except use in implementing activity, being mostly the second option for various criteria.

The two top choices had to be compared visually and from the perspective of improving communication and collaboration of internal stakeholder in a growing IT organization. Tassi provided definitions for both methods, which also helped with the choice of the method. Service blueprint is a description of interactions that provide the service [16]. Touchpoints matrix is a combination of customer journey maps and system maps, which focuses on the personas [16; 17]. The difference between the two methods is that service blueprint focuses more on revealing the layers of the service provider where collaboration happens. And touchpoints matrix has more focus on the customer actions and its touchpoints. Touchpoint, in touchpoints matrix, is a connection with a physical or digital matter that happens during user experience [17]. For this empirical study, the visualization of the internal stakeholders has priority over customer experience, thus service blueprint is chosen as the visualization methods for this case.

In addition, the evaluation of 17 visualization methods by Segelström and Holmlid was viewed to receive a broader perspective about the method in question [17].

Based on the evaluation, the majority of methods were strongly representing customer orientation and relationships between stakeholders [17]. Service blueprint was perceived to be strong in heterogeneity and goods as distribution mechanism [17], which are important characteristics for communication purposes in a diverse group of stakeholders. Alternatively, customer journey was rated strong not only on these two traits but in all traits evaluated in the research [17]. The research included such traits as intangibility, heterogeneity, inseparability, perishability, goods as distribution mechanism, co-production of service, value in use, customer orientation, relationships [17]. Storyboard was also strong in all traits, except relationship element [17].

Visual comparison of the methods revealed that service blueprint provides profound visibility on the company internal processes rather than customer journey. Also, the creation of a meaningful customer journey would require proper customer involvement in the design process. However, the focus of this research is primarily on communication and collaboration of internal stakeholders and service blueprint seems to fully support the goals of this research.

### 3.4.2. Service blueprint

Service blueprint is a visualization method [19] that reveals all functions and activities that relate to the service creation and management [20]. As seen in Figure 4, service blueprint shows those activities in several horizontal rows over time [6:96]. In the first version of the blueprint by Shostack in 1982 there were only frontstage and backstage, which represented the visible and invisible to the customer actions [3]. With the time the blueprint evolved into a five-row representation. For instance, in Figure 4 service blueprint includes customer actions, touchpoints, frontstage, backstage, and emotional experience [6:96].

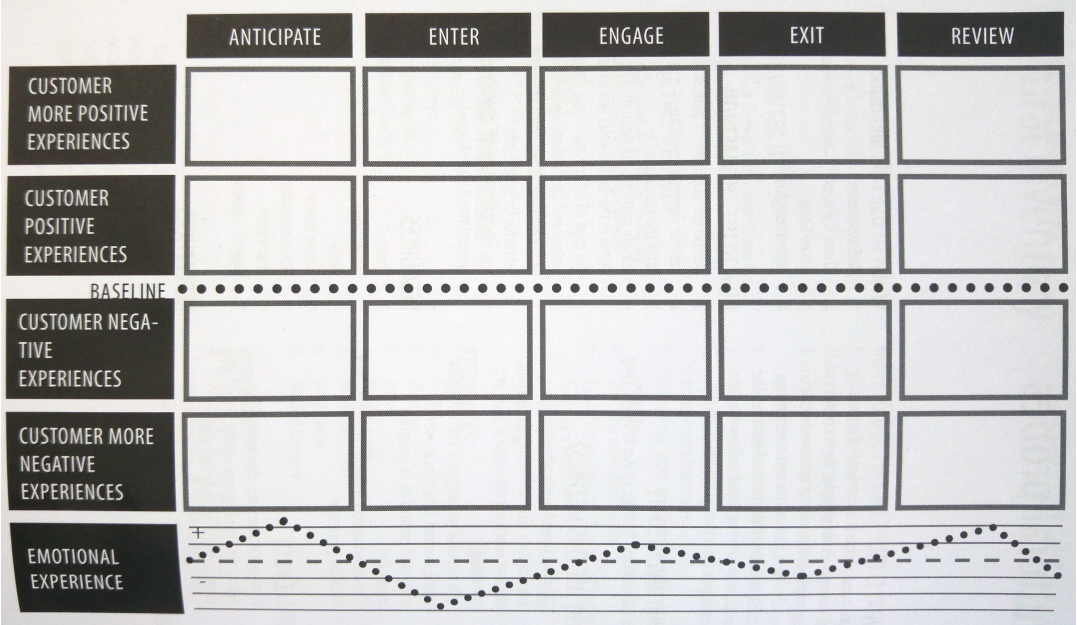


Figure 4. Service blueprint example [6].

The top line of service blueprint presents a timeline of different actions. Usually, the timeline is a representation of a service lifecycle, where the first actions relate to the first interactions of a customer and a service and the last activity relates to the end of the relationship. Customer actions represent the actions that user performs without interacting with the service touchpoints [17], and touchpoint is the actual customer interaction with the service provider that can be usually detected by an event or a physical element. However, there are also slightly different interpretations of the blueprint, which include physical evidence instead of touchpoints as the first line of the service blueprint [1:206-207; 4; 17]. Frontstage is a line where employees and/or actions that visible to the customer are presented, and backstage includes employees and/or actions that happen behind the scenes and customer does not know about these. Last line is often presented as support, which could include people or processes that provide support at certain points of action. Comparison of different sources revealed that there were various options for the last line of the service blueprint: presented as internal interaction of the company [1:206-207], emotional experience of the customer [6:96], a support [4] or other stakeholders involved.

In summary, the core lines are customer actions, frontstage, backstage, and other two horizontal lines of the blueprint could be selected according to the case. Service blueprint should be shaped to suit the situation, and there is no need to stick to the one version [4; 17]. Different interpretation developed from standard version of service blueprint [19] due to great functionality and wide adaptability as a service design method that service blueprint provides. For instance, there is a study that focuses on developing existing service blueprint for information-intensive services [19]. However, these studies fail to focus strictly on the improvement of communication and collaboration of internal stakeholders in an organization through service blueprint.

Benefits of service blueprint include a clear and precise representation of a service that puts a service into a visual form [3]. Service blueprint is useful to detect processes and sub-processes of a service, foster a cross-functional communication and brainstorming around different service aspects [4]. Bitner et al. suggest to always work on the blueprint according to the original purpose, for example, consider future, make decisions, or determine improvements [4]. Furthermore, final version of blueprint could be shaped for the organization internal purposes, such as knowledge transfer, employee resource, trainings [4]. The purpose of service blueprint is to provide reliable information to all of the stakeholders on the level of detail agreed [4].

In this research, the service blueprint horizontal lines are customer actions, touchpoints, frontstage, backstage, support. Touchpoints were selected because in IT business there are certain points of interaction with the customer, such as meetings, that are recognized by the internal stakeholders. Emphasizing touchpoints with the customers would make the service blueprint clearer and more understandable to different employees of the company.

Support was chosen as the last horizontal line of the blueprint to focus on internal communication and collaboration. Support line is to mark stakeholders that somehow interact with the employees on the front- and backstage but still are not

involved in the service. This way also all communication and collaboration participants during the service are mapped to the service blueprint, which is of high importance for this study.

## 3.5. Participatory workshop for organizational process improvement

### 3.5.1. Reason for method selection

Improvement within the organization could happen if there is a possibility for co-creation. People need to have an opportunity to be in one place at the same time for collaboration to happen – this is the environment for co-creation. Indeed, service design is co-creation, since its focus is to involve different stakeholders into the development of the service [2:116]. Particularly end-users are expected to participate in the service design process from the very beginning of the development [2:116-117]. Service designers provide methods to facilitate co-creation between the stakeholders and to support their insights expression [2:117].

In service design, participatory workshops are often organized to facilitate co-creation [2:118]. These could be organized with service provider, end-users, or various stakeholders to share insights and co-create. Co-creation is closely related to communication and collaboration activity that produces results. The purpose of this study is similar: select a method that would create an environment where organizational process improvements could be discussed and analyzed. Participatory workshop is a suitable method to gather target audience at one time and facilitate co-creation of the participants.

### 3.5.2. Participatory workshop

Participatory workshops have been used widely in many disciplines and industries, and the literature refers to it as workshop, design workshop, interactive workshop, and participatory workshop. According to Miettinen's analysis of service design methods, design workshop is an innovation method that gathers information through participation [21:65-66]. This method is creative and requires participation of the users [21:65-66], and facilitates co-creation [2:118]. In service design, participatory design activities are organized to understand the viewpoint, knowledge and attitude of the customers about the findings made in the design process and involve them into the process to receive their insights [1:270].

From an organizational benefit perspective, several articles found participatory workshop beneficial for an organization due to its collaborative approach and feedback opportunity [22; 23]. These researches also found an advantage of participatory workshop in sharing experiences of the participants [22; 23]. It is revealed that individuals most probably understand and provide feedback on the issues and topic that they have experience themselves [22; 23]. Workshop is found to be a suitable opportunity to share those experiences with others [22]. In successful workshops, participants get so excited that they feel there was not enough time to share everything [22]. In order to organize successful workshop several aspects need to be considered.

#### Preparation

Different stakeholders should be involved to reach cross-disciplinarity of the workshop [24]. Mobile phones and other devices should be off for the participants to be engaged in the activities [24]. It is suggested to consider the environment of the design workshop [22; 25], since the purpose of the workshop is to facilitate interaction and discussion. It is vital that the location of the participatory workshop endorses safety and encourages communication and collaboration [22].

Scheduling is important in workshops for the participants not to be overly tired [24]. Sessions of the workshop should have assigned certain time as well as breaks in between those and for eating and drinking [24]. Also, time spent on arrangements has to be considered in the schedule [25]. However, it is suggested not to be strict about the time limits to allow the participants to discuss deeper the topics that will rise during the workshop and would require more attention [22]. Another important aspect related to scheduling is the preparation of the program based on the aim of the event [22].

### Activities

The existing literature suggests that a workshop should include different activities, including individual and group tasks [25]. To increase engagement to the workshop activities, Pavelin, Pundir and Cham mention the importance of explaining the goal of each activity and its suitability for this purpose [25]. At the end of the activity the results should be presented and discussed [25].

It is suggested to first engage participants of the workshop through an exercise that would reveal the actual problems [24] or introduce personal experiences of the participants with the topic [22], and later allow searching for the solutions for those issues. The purpose of the participatory workshop is often to gain feedback on certain topics [23] and therefore such activities should be planned into the program of the workshop [22]. Workshop participants seem to enjoy providing feedback or objective opinion, nevertheless it depends on the type of activity and on the individuals of the participating group [22]. Thus, activities should be carefully chosen to fulfill the aim and needs of the design workshop.

Another part of the participatory workshop includes co-creation activities, where quite often solutions or ideas are generated in teams [22]. As a result, there are a lot of findings at the end of the event. Prioritization of the solutions is a method to compare options and select the suitable ones, however prioritization activity is quite difficult to perform [24]. Therefore, there are cases where the solutions are

left non-prioritized on purpose [22]. It is typical that at the end of the workshop there is no common agreement of the final decision, nevertheless the next actions should be agreed [23; 24].

### Tips for facilitator

As for the facilitator, it is important to remember what is the goal of the workshop and to rely on the planned agenda to succeed in the event [22; 24; 25]. Pavelin et al. also suggest the facilitator to familiarize with the workshop expertise area to be able to explain and prioritize topics during the event [25]. All the materials provided for the workshop should be available, moreover it is suggested to have a person controlling this [22; 24]. The same person should check that the goal of the exercise is pursued and the insights are documented [24]. Facilitator could be responsible for these aspects, or someone else if there is a possibility for that [24]. Sometimes there could be also more than one facilitator at the workshop [22].

## 3.6. Summary of literature review

Service design is a discipline that provides methods for creation and improvement of services. Nevertheless, service design definitions are found that stress communication and collaboration improvement of internal stakeholders in an organization [1:31-32]. For this and many other reasons, service design is found to be beneficial for organizations. Organizational benefits of service design were introduced at all stages of service design process and could have various positive effects on business [2:101-107]. There are benefits that rely on service design thinking principles, on immediate and long-term actions.

This research concentrated on applying service design thinking to improve communication and collaboration of internal stakeholders, therefore selected service design methods that support organizational process visualization and improvement were analyzed in more detail. Different categorizations of service design methods offer aid for selection of the suitable visualization method

according to the case [1; 6; 14; 15; 16]. Service blueprint was found to be a suitable method for this case study, based on Tassi's categorization [16]. Service blueprint is a detailed prototype that presents all layers of interaction during the process [20].

Participatory workshop was selected as a service design method to improve organizational processes in a company. Participatory workshop is a creative way to involve stakeholders to create an environment of communication and collaboration. Some recommendations and best practices to conduct a successful workshop exist in the existing literature [22; 23; 24; 25], however there were not many scientific publications on the topic. The Internet provided numerous websites with instructions for a succesful workshop, nevetheless only one resource of this type was utilized in this literature review. Information gathered on workshop organization was divided into three categories: preparation, activies, and tips for facilitator.

Service design is a young discipline and the literature had to be gathered from different science departments, such as business, engineering, and design. In this thesis, the majority of the analyzed literature about service design was scientific. However, there was an enormous input from service design books in this literature review, especially about communication and collaboration aspects related to the discipline [1:31-32]. Also, organizational benefits of service design were mostly analyzed in the printed literature [1; 2].

In conclusion, service blueprint and participatory workshop were selected as suitable methods for this study to visualize and improve organizational processes of an IT company. These service design methods were further applied in the empirical study to draw conclusions how service design methods support communication and collaboration of internal stakeholders in a growing IT organization.

# 4. Empirical findings

## 4.1. Problem diagnosis

The findings of 36 interviews supported the creation of the current internal process visualization for the case company, which is presented in Figure 5. The whole process was divided into four parts based on the lifespan of the customer: pre phase, two during phases, and post phase. Each of those phases had a corresponding name that related to the action happening in that part of the company process.

The first part of the process seen in Figure 5 is called “Selling” and it visualizes the process related to a customer is buying the solution. Second phase is called “Implementing”, where a product needs to be implemented for a customer, followed by another during phase named “Service”. Service phase includes actions related to providing continuous service to the customer until customer decides to terminate the contract, which then relocates the customer to the post phase of the process. Last phase of the process is called “Leaving” and it includes actions that are taken when the customer is not under the continuous service provided by the company anymore.

Each of the four internal process phases is explained further in more details. The descriptions are supported by Figures 6-8, which together form the whole internal process presented earlier in Figure 5.


Figure 5. Current internal process blueprint of the case company.

### Pre phase: Selling

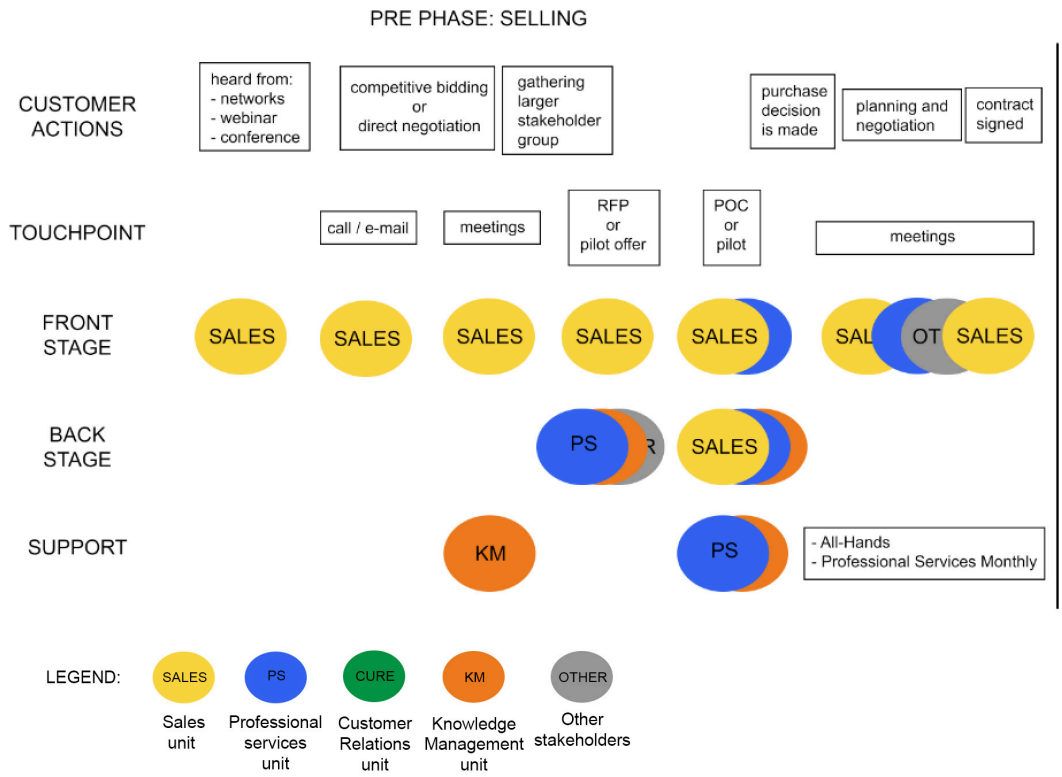


Figure 6. Pre phase of company solution creation internal process: selling phase.

The pre phase of the company's internal process is selling the solution to the potential client. A closer look at this phase is provided in Figure 6. The whole process is lead by Sales unit, which starts and ends with customer interactions, mostly in organized virtual and physical meetings. Internal consulting with the product unit happens as soon as there is a need for it. Such internal communication usually occurs through face-to-face unscheduled talks, and later an organized meeting is held to decide on further actions related to the sales case. These communication approaches seem to provide sufficient and timely support to the sales team during the sales cases.

Nonetheless, Knowledge Management team is found to have insufficient presence in the customer cases in order to receive deeper knowledge on the end customers and their needs. Such information would benefit the software

development, thus the offering in the market would match prevailing industry needs.

Depending on the customer's buying process (competitive bidding or direct negotiation) there are different touchpoints in the middle stages of the internal company process. However, the process has few differences concerning the internal stakeholders: same units involved, similar actions performed. In competitive bidding, the company receives a request for proposal (RFP) that is filled by several company units: Professional Services on project details, Knowledge Management on software issues, and Information Security Officer (marked as Other in the service blueprint) provides needed security aspects. Sales team is responsible for the document itself and fills most of it. Other stakeholders involved participate in the filling through email or the collaboration happens during a scheduled meeting. A scheduled meeting of one hour was found to be a highly efficient collaboration approach in such cases. The RFP is completed directly and throughout at once. Same happens in the direct negotiations, Sales unit forms a pilot offer that has details provided by other teams on the backstage.

A successful sales case is followed by a proof of concept (POC), in competitive bidding, and a pilot, in direct sales. Both are fast-paced projects that are completed for the client in order to interest a customer in a purchase of the solution. Here, the smaller, and more complex projects are lead by Sales unit and help from other units is received, and the larger, more standardized cases are lead by the project team in the frontstage, and other teams are in the backstage and the support.

Support is seeked by talking directly with the person who could provide insights, and it is seen as positive possibility. The current company size and environment support the possibility to chat with the desired person to receive almost immediate feedback on the puzzling issue. This way, communication about and collaboration on different types of issues happen on daily basis.

Moreover, the more official approach to communicate about sales news to other units of the company is through organized meetings, such as All-Hands meeting for the entire organization, and Professional Services Monthly meeting where all Professional Services unit employees. Based on the interviews, these two monthly meetings are seen as the communication means for the cross-unit information sharing and the only official channels to receive status update of the Sales unit on the prospective clients and the projects to be prepared for.

### During phase: Implementing

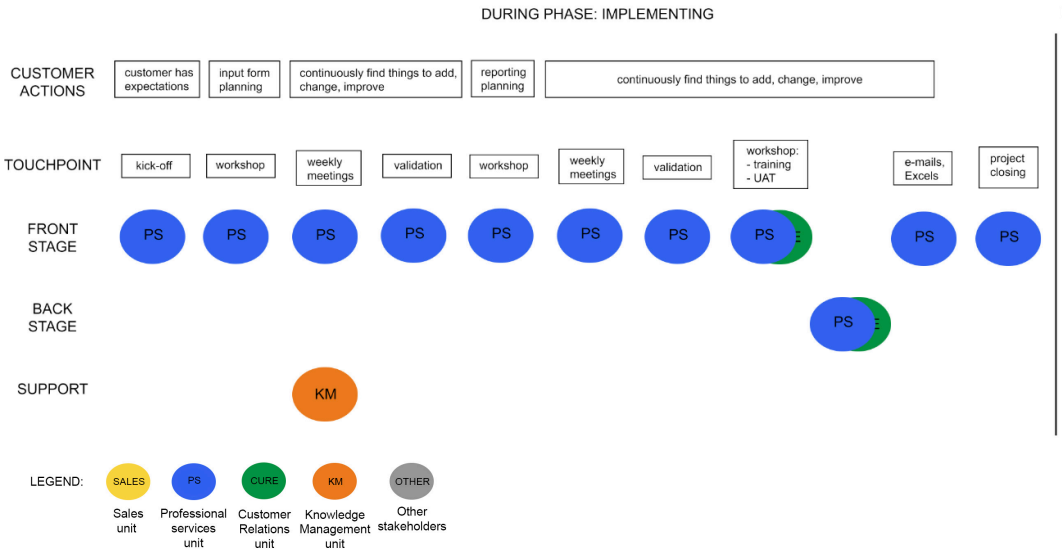


Figure 7. During phase of company solution creation internal process: project implementation phase.

When a contract is signed between the parties, a during phase starts where the company is responsible for the new client and the project is implemented. As seen from Figure 7, Professional Services is responsible for the whole process, both the arrangement and the implementation. The process starts and ends with meetings and in the middle the process has specification workshops, weekly meetings and validations. The configuration work is done all the time between the first and last meetings. Knowledge Management team supports the project team with the configurations. Aid from the product team is received through face-

to-face communication mainly. It is perceived as the most efficient and convenient way of communication. Besides this support communication, there is no much collaboration between Professional Services and other company units during the project implementation.

The internal process prototype also reveals that there is communication and collaboration between Customer Relations and Professional Services teams closer to the end of the project. During last workshop, which could be a training or User Acceptance Testing (UAT) workshop, the customer meets his Customer Relations manager for the first time. At the same time the responsibility for the customer is fully transferred from project manager to the customer relations manager. Based on the interviews, some of the Customer Relations managers also had a meeting with the project manager where knowledge about the new customer and configurations had been transferred. The purpose of such meeting is to ensure that a person responsible for the customer has a good basis to start a relationship and would be able to provide continuous service.

### During phase: Service

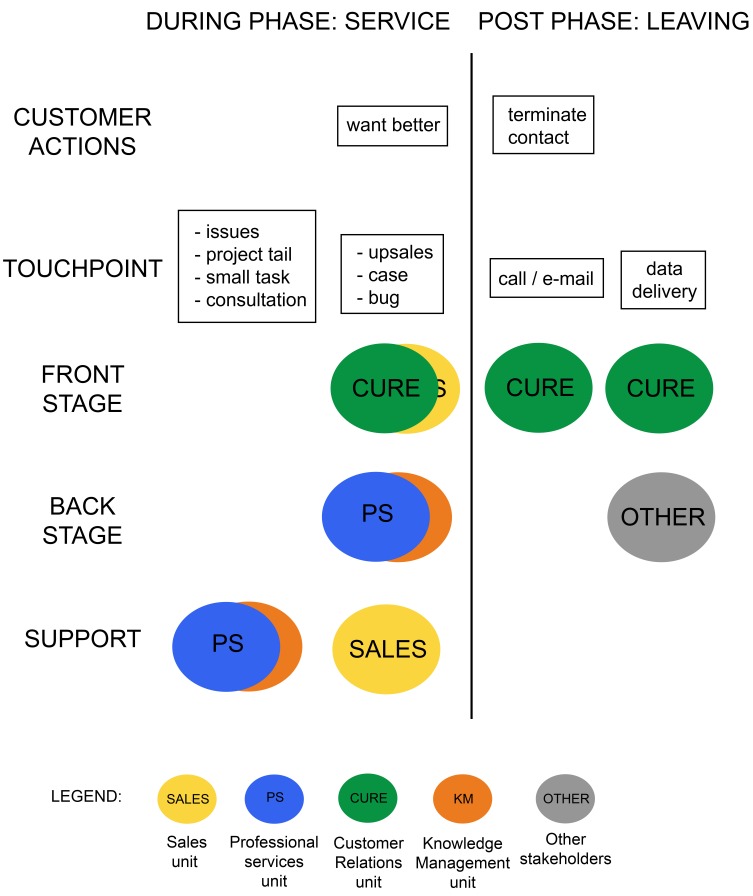


Figure 8. During and post phases of company solution creation internal process: continuous service and leaving phases.

When the project is signed off and, Customer Relations unit manages communication with customer. As seen in Figure 8, Customer Relations is always on the frontstage. Customer Relations receive different types of requests from customers on a daily basis. These, however, could be divided in two groups depending on the complexity of the request. In cases where customer wonders how application works, or there is a smaller issue to be fixed, customer relations manager takes full responsibility on the case. Manager only seeks support from more technical units to understand the environment and receive advice on further actions. Support is seeked by talking directly to the suitable person, since time is critical in customer requests.

In larger cases, bug fixes, or upsales the work is done by Professional Services or Knowledge Management team, where Customer Relations representative hold only the communication role with the customer. Sometimes collaboration with salesperson is done from Sales team during service time. Salesperson provides aid and knowledge to the manager to support upsales.

### Post phase: Leaving

Figure 8 also represents the post phase of the internal process, which illustrates the situation of customer leaving the company. Since there have been only several such cases, few interviewees were able to explain the process. Nevertheless, the process includes informing the Customer Relations manager about contract termination, and all data is delivered to the customer if requested. Then an email is sent to the IT department asking to switch off the customer environment.

### Communication and collaboration

During the interviews, it was discussed not only about the current internal process but also about the suggestions that could be applied to improve communication and collaboration between the internal stakeholders. Table 8 presents main topics discussed during the interviews. There are 6 main topics discussed during the interviews that are divided in 3 main groups. These groups are “Early involvement in transition periods”, “Software development”, and “Documentation”.

Table 8. Communication and collaboration improvement topics discussed in the interviews.

| **Early involvement in transition periods** | **Software development** | **Documentation** |
|---|---|---|
| From Sales to PS | Knowledge on customer needs | Best practices |
| From PS to CURE | Balance between internal and external development | Customer customizations |

Transition periods imply to the process phase start and end, which are illustrated with black line in Figure 5. This moment is recognized by the frontstage company representative change, which means that direct communicator to the client changes. Early involvement in transition periods would mean start of the collaboration between the company units earlier before the switch of the responsibility happens in from of the customer's. Sales unit would involve Professional Services early enough to influence certain technical agreements, and Customer Relations would increase appearance at the end of the implementation project to form better relationship with the customer. Currently both transitions were found to be rapid and sudden. There is no strict rule on the schedule and guidance on how the transitions should be organized.

"Software development" category involves two topics related to the company product. Firstly, Knowledge Management team was identified to have almost no direct communication with the end-users and little collaboration with the customers during software development. Therefore, collaboration not only with the internal stakeholders but also with the external stakeholders (customers) requires improvement. Secondly, it was realized that the software development team has to develop new features for the potential clients, which could be called external development, and constantly improve the standard features of the current software, which could be called internal development. New feature developments in the selling phase (pre phase of the company internal process) do not necessarily evolve to the standard features of the product. The more the software development team has to spend time on external development the less

time is spent on internal development. This results in slow development of the standard product and complexities in the project implementation phase. Thus, excessive collaboration of the software development team with the sales cases could have negative effects if no right balance is established between external and internal development.

Las but not least, Table 8 presents the third group “Documentation”. Documentation was found to be a mean to improve both communication and collaboration between the internal stakeholders in an IT organization. Since there was often an information gap between the teams due to rapid transitions, documentation would benefit all parties in the present and future work. Best practices on how to do certain aspects, and also best practices on making documentation itself were mentioned to be the critical factors to the improvement. Documentation on customer customizations was also mentioned as the improvement element to consider.

## 4.2. Action intervention

Participatory workshop was organized for the action intervention stage of this empirical study. The deliverables of the interviews, such as the internal process blueprint and ideas on communication and collaboration improvement, were utilized in the organized workshop for selected representatives of the internal stakeholder groups. The 3 hours long workshop was organized in the afternoon not to interrupt the daily work of the employees. Eight representatives were invited to the workshop to go through the findings and analyze the accuracy and the changes required to the process visualization. Two representatives per internal stakeholder group were chosen to bring variety to the workshop participant group. In the end, seven participants attended the workshop.

Table 9. Workshop schedule.

| | | |
|---|---|---|
| **Part I** | | |
| 13:00 – 13:15 | Introduction | 15 min |
| 13:15 – 13:45 | Affinity diagram | 30 min |
| 13:45 – 14:15 | Introducing the internal process | 30 min |
| | | |
| 14:15 – 14:30 | Coffee break | 15 min |
| **Part II** | | |
| 14:30 – 14:45 | Improving blueprint | 15 min |
| 14:45 – 14:55 | Placing post-its | 10 min |
| 14:55 – 15:10 | New pain-points | 15 min |
| 15:10 – 15:30 | Ideas for improvement | 20 min |
| | | |
| 15:30 – 15:45 | Filling the survey | 15 min |
| 15:45 – 16:00 | Open discussion & feedback | 15 min |

As seen in Table 9, the original workshop was planned as two sessions with a break in between. Exactly same schedule was presented to the participants during at the beginning workshop. However, the proposed coffee break did not take place, since the participants of the workshop wished not to have one. Therefore, in practice the participatory workshop lasted 2 hours and 40 minutes.

The program of the workshop consisted of four parts: the affinity diagram exercise, the internal process analysis, the improvement ideas discussion, and the feedback survey. Table 9 shows the detailed plan of each activity of the event. After the introduction, half an hour was allocated on the first exercise to get participants involved into the topic of the workshop. Also, the affinity diagram exercise prepared participants for the upcoming exercises, since it is the exercise where people can dive into the topic easily and they have to move to put the post-it papers on the wall.

Next, the prototype of the internal process was presented to the group and their feedback was received on the improvement aspects of the introduced blueprint. Afterwards the discussion was held based on the detected problems from the previous exercise. The discussion continued on the suggested improvements for communication and collaboration of the internal stakeholders during the internal process. Possibilities and constraints related to the improvement ideas were thoroughly analyzed in a group. Even though the exact solutions for certain pain-points were not selected for the further implementation, the dialogue between the participants revealed what discussions are needed internally in order to make action plan.

The participants had time to fill out the survey at the end of the workshop. The survey form named “Critical feedback”(Appendix B) consisted of questions to support the second research question of this study. The received answers were utilized in the reflective learning part of this research. The survey was given out at the beginning of the workshop and the participants were encouraged to write down their comments and feelings during the workshop when there was something that came to their mind. Also, time was reserved at the end of the session for everyone to have a moment to fill in the feedback survey properly.

### Workshop strengths and weaknesses

Facilitator notes and observations collected during workshop provided data for the analysis of the applied service design method for improvement of organizational processes – participatory workshop. Benefits and weaknesses of the organized workshop are presented in Table 10. The amount of strengths and weaknesses is almost equal, thus each of the aspects is accurately discussed further.

Table 10. Strengths and weaknesses of the organized participatory workshop.

| **Strengths** | **Weaknesses** |
|---|---|
| Participant amount | Workshop length |
| Location | No breaks |
| Participant engagement | Focus group |
| Communication and collaboration | Detailed prototype |
| Preparation | |

The positive sides of the workshop included the amount of participants: 7-8 people did not seem as too small or too large group size, since there was enough time for each person to participate in the discussion. Two representatives per unit were a suitable amount of employees for successful discussions and analysis of the internal process. However, one person had to leave in the middle of the workshop, since most of the aspects discussed were too unfamiliar for the employee who is not involved with the customer directly on the daily basis.

The location of the workshop served its purpose, which was keeping the relaxed atmosphere without creating tensed feeling of a serious meeting. Open space did not affect the concentration and involvement of the participants in a negative way. On the contrary, participant engagement was high during the entire workshop: the interaction tasks did have motivational effect on communication and collaboration between the internal stakeholders. Even though several participants were involved in their daily work tasks at some moments, this did not affect the group involvement and the discussion flow of the group.

Weaknesses of the organized workshop include the length of the workshop. It was scheduled that the workshop would take 3 hours, which takes a lot of time out of employee's workday. Moreover, the participants were quite tired by the end of the workshop. Indeed, the workshop lasted 2 hours and 40 minutes and the participants did not wish to take a break in the middle of the event. Tiredness,

however, had no huge effect on the level of collaboration and communication between the participants.

Furthermore, the focus group and the blueprint scope slightly mismatched. The visualization of the internal process seemed to be too detailed and therefore it was difficult to have all of the stakeholders understand the entire internal process of the company. At times, some of the participants could not contribute to the discussion when the topic shifted to the details of a certain processes. Nevertheless, the participants were highly active when issue related to their team or responsibilities was discussed. Cross-functional group of internal stakeholders supported healthy discussion about the root causes of certain issues. Healthy communication happens when all stakeholders have equal amount of input and reach understanding between each other. Moreover, cross-functionality created an environment where different viewpoints were shared. Therefore, communication and collaboration were considered as the strengths of the organized participatory workshop.

As preparation is considered as one of the important aspects in the workshop organizations, it is natural to define if the preparation for this participatory workshop belongs to the strengths or the weaknesses. As seen from Table 10, preparation for the workshop was successful, and there are several aspects that support that. The success in the choice of the amount of participants, the location, the engagement activities and the fact that the break was planned in the schedule refer to a successful planning of the participatory workshop. Furthermore, the supplies, such as paper, post-it notes, pens, were prepared beforehand. Also, a paper version of the internal process prototypes was printed out on the paper. All in all, there was no lack of the needed supplies during the event.

All of the strengths and weaknesses mentioned in this chapter were factors that influenced the creation of communication and collaboration environment. In

addition to the factor that the workshop participants were at one place at the same time, the participants were able to have healthy discussions.

## 4.3. Reflective learning

Four methods were applied to gather data for the reflective learning analysis of this research. These methods included survey and open feedback received from the workshop participants, facilitator observations, and passer-by comments received from the co-workers right after the workshop session. Also, the data gathered during the action intervention supported in revealing the learnings and improvement propositions for both the process visualization and the methods applied during the study.

### 4.3.1. Improved process visualizations

#### Current internal process

Gathered information allowed to modify the process prototype so that it represented company internal process more accurate. Moreover, a higher-level version of the blueprint (Figure 9) was compiled. The workshop revealed that a simpler version of the prototype was needed to gain understanding of the process by various employees. Therefore, the detailed visualizations of the internal process are pictured separately (Figures 10-12).

The main blueprint of the internal process seen in Figure 9 has the same structure as the first visualization created based on the interviews: the whole service life cycle is divided into four stages. However, the change on the horizontal lines of the blueprint had been applied. The customer actions line was removed to reduce the amount of represented data. The survey response and the facilitator observations supported providing a lighter version of the process that

could be shared among all employees in the company. Thus, the main blueprint in Figure 9 had been created.

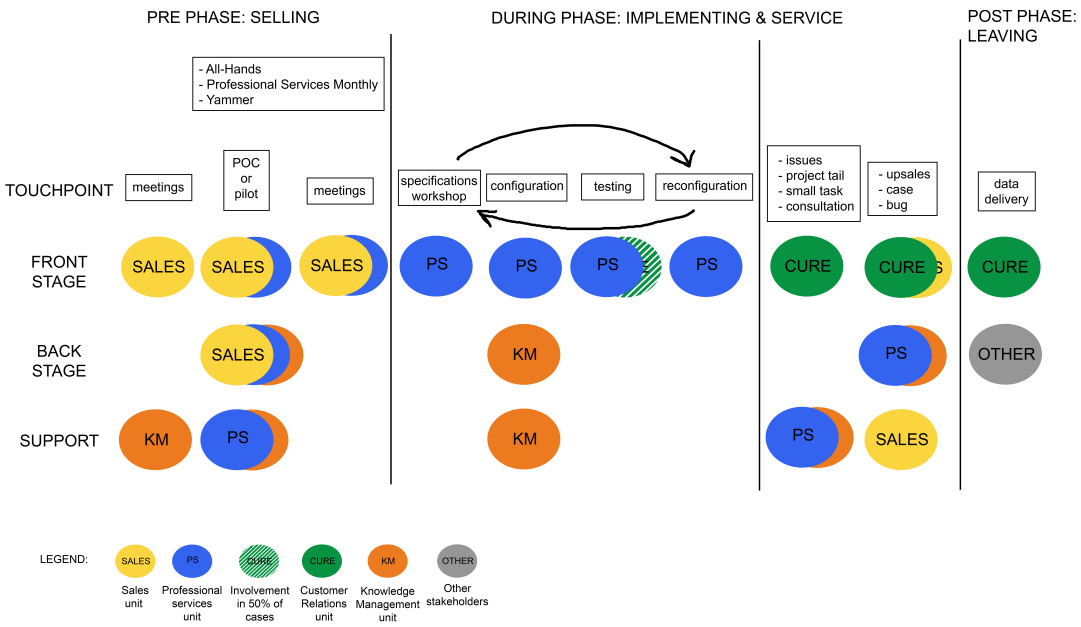


Figure 9. Higher level representation of the company internal process.

Furthermore, the amount of activity steps represented in the process was decreased. In the project implementation phase solely one iteration of a general process had been visualized in the main service blueprint. In addition, opening and closing meetings were removed from the same process stage. Such improvements are seen to present a clearer, more general view of the process within the case company. Also in addition to All-Hands and Professional Services Monthly meetings, Yammer was added as an official communication method for the company employees, especially regarding sales related news. Yammer is a social platform for an organization with the features close to Facebook. Even though this communication channel was not mentioned during the interviews, the workshop participants strongly recommended adding it in the visualization.

As mentioned earlier in this chapter, Figures 10-12 represent a detailed view of the process phases from the main blueprint. These could be considered as sub-versions of the main blueprint. Figures 10-12 are only slightly modified compared

to the first versions of the internal process visualization presented at the workshop.

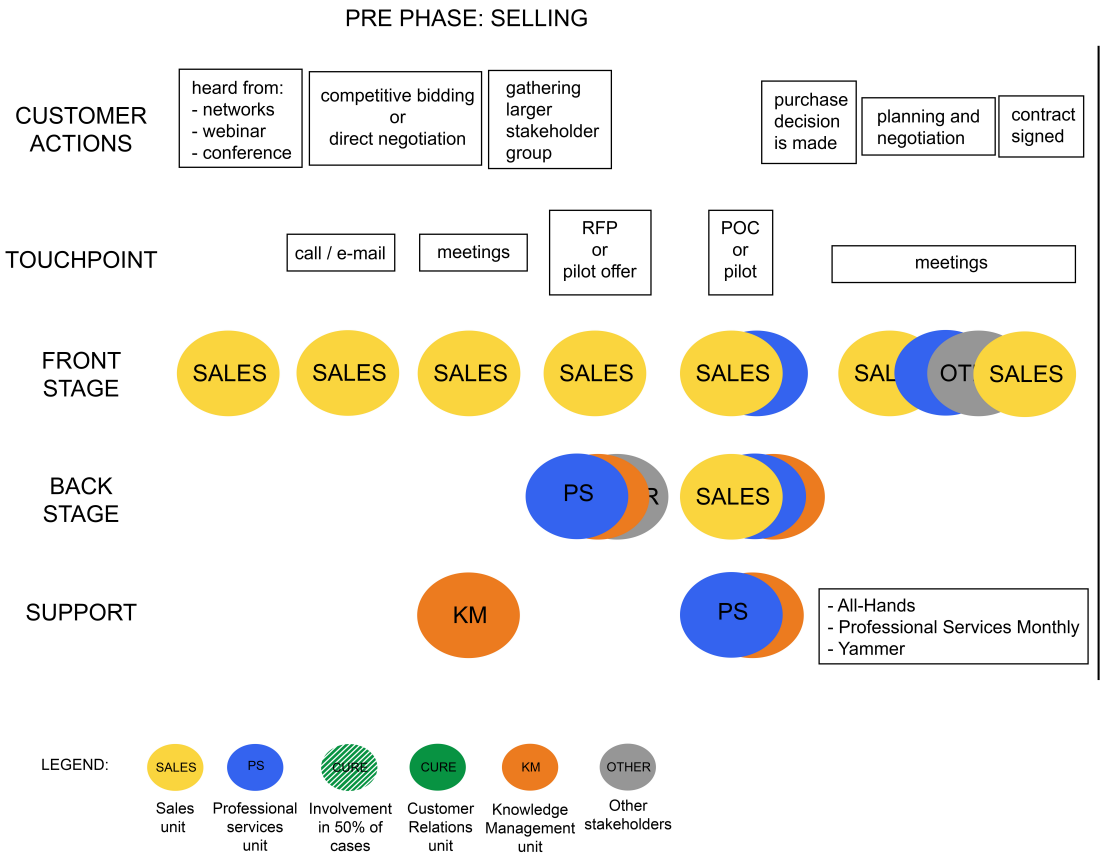


Figure 10. Detailed process of selling phase.

The process of selling phase that is lead by Sales unit is seen in Figure 10. There were no changes applied to the visualization of the activities. Nevertheless, an addition of another communication channel has been applied similarly to the main blueprint of the internal process. Yammer was added as the third approach to deliver information about the upcoming cases to other units of the organization.

Slightly more modification was applied to the project implementation phase presented in Figure 11. Knowledge Management team was added also as a backstage stakeholder under touchpoint called “weekly meetings”. The main activity in the implementation process is the software configuration work that is

executed by the project team. In cases when there is an agreement with the customer that some extra features are to be developed in the software, the software development team is responsible for execution of this part of work.

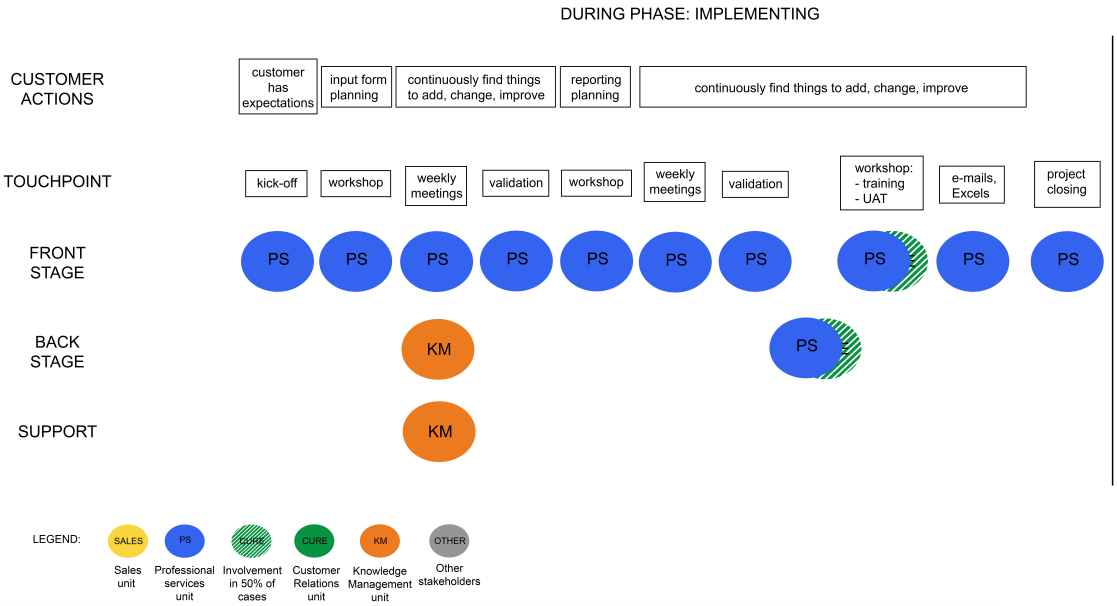


Figure 11. Detailed process of implementation phase.

Some adjustments were also applied in the activities where Customer Relations team appears in the process. Figure 11 first illustrates the internal meeting between the project team and the manager from Customer Relations, and afterwards the appearance of the Customer Relations manager is visualized with the project team at the UAT workshop close to the end of the project. Nevertheless, the feedback from the workshop was that the appearance of the manager in both activities did not necessarily happen. It was agreed that in 50% of cases there were solely Professional Services representatives in the internal meeting and the last workshop at the customer premises. Thus, the visualization represents that Customer Relations representative is involved in visualized activities in 50% of cases.

Figure 12 represents Customer Relations lead part of the internal process, since there is always a manager from this unit in the frontstage of the service provided. One correction applied after the action intervention with the company employees

was adding Sales unit representative to the frontstage of the touchpoint where upsales or larger cases are sold to the customer.

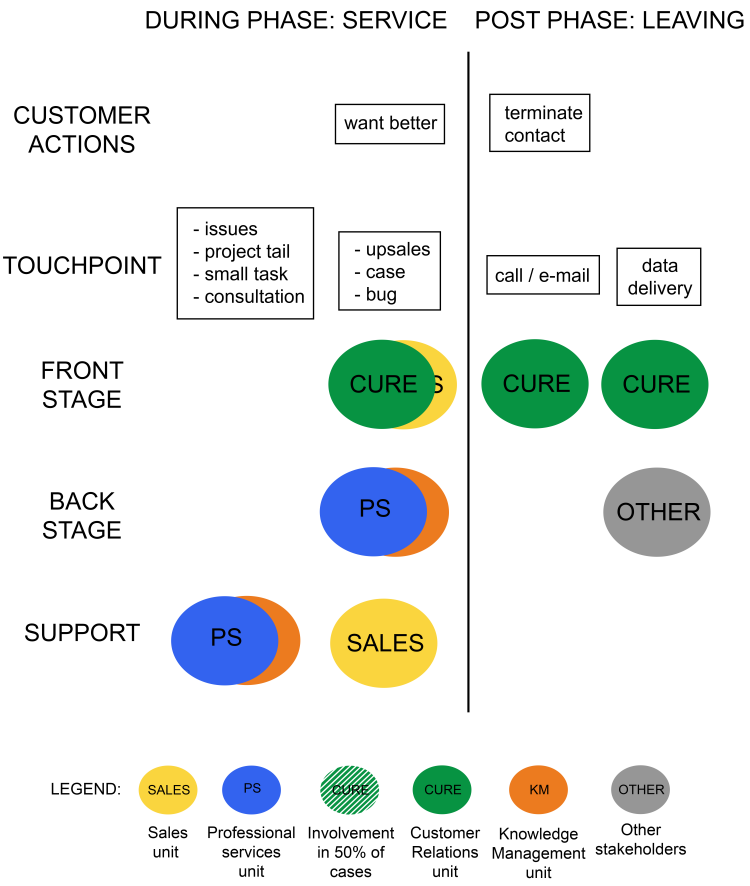


Figure 12. Detailed process of service and leaving phases.

There were minor changes involved in the adjustment of the current internal process visualization. Nonetheless, the modifications applied were important for the employees of the company. Also, the conducted 36 interviews and the participatory workshop revealed numerous ideas and possibilities for the better version of the internal process in order to improve communication and collaboration of internal stakeholders. More about these improvements is explained in the next chapter.

## New internal process

As a result of close work with the employees of the organization, this chapter presents the new version of the internal process visualization and actions that could be taken to improve communication and collaboration within the company units. Figure 13 presents the internal process of the company that includes the improvements for the process that were suggested by the employees during the two previous stages of the research. In addition to the main blueprint of the process with the improvements, detailed blueprint sub-versions could be found from Appendix C.

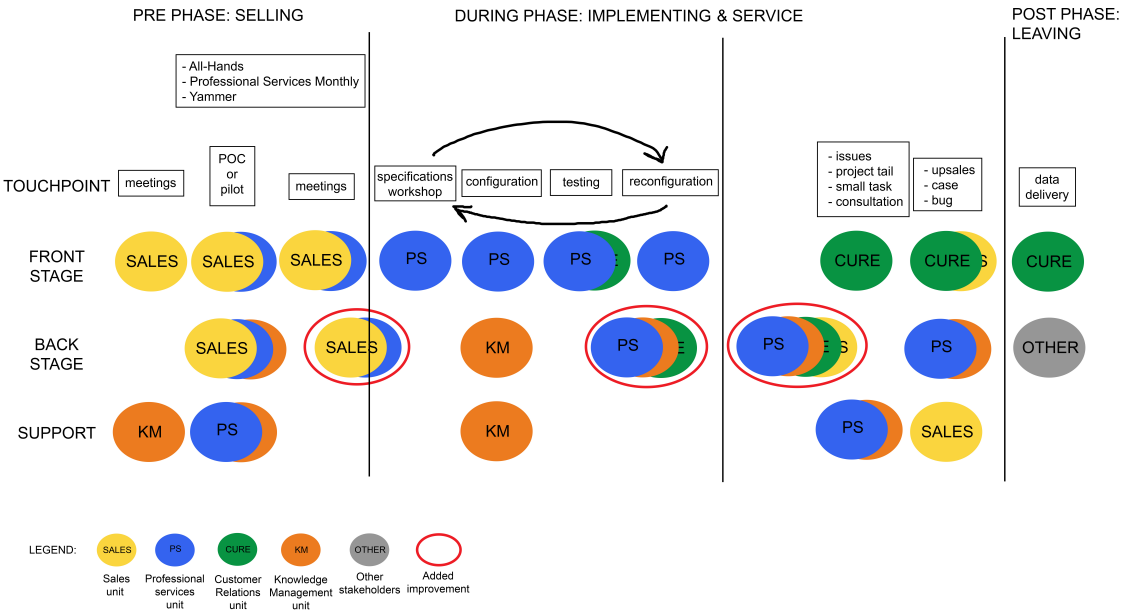


Figure 13. New main service blueprint with proposed improvements of the internal process.

Figure 13 has three activity improvements in the internal process of the IT company. Red circles represent the proposed modifications to the current process in the main blueprint of the company internal process. All of these improvements relate to the transition periods of the internal process as these were deeply discussed in the previous phases of the research (see also Table 8). The new activities of the process are presented in the Table 11 in order of their appearance in the process.

Table 11. Concrete process improvements proposed to influence communication and collaboration during the transition periods of the internal process.

| Action | Details on the action introduced in the new process visualization |
|---|---|
| First hand-over meeting | Sales and Professional Service hand-over meeting before project start |
| Second hand-over meeting | Professional Services, Knowledge Management and Customer Relations hand-over meeting before project closure |
| Retrospective meeting | Professional Services, Knowledge Management, Customer Relations and Sales retrospective meeting after project closure |

Meetings presented in Table 11 are proposed to be a part of the internal process, since currently there are no such cross-functional discussions before transferring the responsibility for the client. Communication and collaboration that would happen in such meetings would be beneficial for the necessary knowledge transfer between the internal stakeholders. As seen from Table 11, all of these meetings involve participations of several internal stakeholders. Each meeting is explained further in the next paragraphs.

First hand-over meeting would be organized between Sales team representative and Professional Services team. The purpose of the first hand-over is to introduce the information about the client and the upcoming implementation project to the team who will be involved with the customer further during the project implementation phase.

Second hand-over meeting would consist of Professional Services and Knowledge Management representatives, who had been involved in the implementation of the solution for the client, with Customer Relations manager to share knowledge significant for the continuous service and maintenance of the configured solution. It is also a good opportunity for various stakeholders to learn how similar tasks should be executed.

The retrospective meeting with all of the company unit representatives involved in with the certain customer should meet approximately in a month after the project execution in order to discuss whether the provided solution met the expectations of the customer. Furthermore, the feedback from co-workers should be shared related to any aspect of the case for further successful collaboration.

Apart from the previous three improvements, the appearance of a Customer Relations representative in the last testing workshop with the customer is compulsory in order to improve internal transfer of customer responsibility between the units and support a relationship creation between the Customer Relations manager and the customer.

There are more actions that the case company could apply to succeed in improvement of communication and collaboration of internal stakeholders. Table 12 reveals main improvement proposals that are based on the two previous stages of this action research.

Table 12. Concrete action proposals that will improve communication and collaboration of internal stakeholders of the case IT organization.

| # | **Action to improve communication and collaboration in the case company** |
|---|---|
| 1. | Sharing research insights with the organization management |
| 2. | Clarifying the decision on the type of company |
| 3. | Reminding the employees of their possibilities |
| 4. | Creating and maintaining documentation |
| 5. | Having cross-functional participatory workshops |
| 6. | Improving internal processes continuously |
| 7. | Introducing the process visualization to the whole company |
| 8. | Using process visualizations for introduction and training materials |

The first action in Table 12 is sharing research insights with the organization management. The organizational changes will take place in case the management

has accurate understanding about the internal communication and collaboration issues. Conducted interviews and the participatory workshop offered a lot of improvements for the internal collaboration. However, several aspects needed to be solved by the higher management before the concrete actions could be applied.

Clarifying the decision on the type of company people are working at and reminding the employees of their possibilities would the actions higher management would need to take first. If there is a common understanding across the units whether the company is working like a project, software, or consulting company, there will be a certain set of better practices according to the chosen type of functioning. Also, the employees would be able to improve their daily work when reminded that processes related to their tasks can be improved without waiting for the approval of the higher managers.

Since the customer is transferred at least two times within the organization, it will be highly efficient and helpful to write documentation related to the customers and best practices related to the work. Documentation could be done together, enforcing collaboration and communication between the units. Furthermore, documentation would transfer the substantial knowledge, which would ease co-working with and support access from other teams. Cross-functional participatory workshops could be organized not only for writing the documentation but also to improve the internal processes. Workshops are good for ideation, therefore new solutions could be reached in those regarding any issue. Continuous improvement of internal processes will support communication and collaboration of internal stakeholders.

Last but not least, introducing the process visualization to the whole company and using these materials for introduction and training materials further. These actions will create a common understanding of the interaction between the internal stakeholders for new and old employees of the organization.

The aforementioned improvements are learning from the empirical study for the case organization. Nevertheless, the aim of the learning was also to understand the applicability of the service design methods for the purpose of improving communication and collaboration of internal stakeholders. For that reason, the next chapter will introduce reflective learnings about the applied service design methods.

### 4.3.2. Learnings about service design methods

The quantitative results received from the survey about the applied service design methods were quite high. The average results for communication and collaboration were 5,83 on the likert scale from 1 to 7 (Table 13). Nevertheless, the participants rated their learning experience from the process visualization slightly lower. There were certainly things to improve in both process blueprint and workshop. Thus, the improved versions of blueprints for the internal process were presented in the previous chapter, and the improved approached to service blueprint and workshop are suggested further.

Table 13. Quantitative data from the survey on the benefits of applied service design methods.

| **Evaluation criteria** | **Average of the results from likert scale 1-7** |
|---|---|
| Visualization supporting communication | 5,83 |
| Visualization providing learnings | 5 |
| Workshop supporting collaboration | 5,83 |

Qualitative data received from the workshop participants also revealed understanding of positive effects on internal communication and collaboration. The workshop participants were able to recognize benefits of service blueprint and participatory workshop for the company. Some quotes from the survey results are introduced further.

"I think this was very beneficial and I think we got good ideas how to improve."

Workshop participant A

"Make this a continuous process (maybe a lighter version)."

Workshop participant B

"At least the prototype view should be shared among all of us."

Workshop participant C

"Yes cross-functional workshops for where work is done helps out in resolving issues."

Workshop participant D

Aforementioned results support the fact that service design methods had positive influence on communication and collaboration of the internal stakeholders. Nevertheless, learnings for both process visualization and improvement methods need to be gathered in order to suggest further application of the methods. Next two sections will introduce improved versions of service blueprint and participatory workshop based on the gathered insights from the empirical study.

### Learnings about service blueprint

Not also quantitative but also qualitative data revealed that employees of the case company enjoyed seeing the visualized version of the internal process and the transparency it provided on communication and collaboration of various company units at different process phases. Workshop participants were able to understand the whole process and roles of units in a structured way.

One of the purposes of the participatory workshop was to gain insights on service blueprint through observations and survey. Gathered data provided learnings that could be applied to propose improved service blueprint that would benefit an organization in gaining visibility on their internal processes. There are five

learnings from the empirical study introduced in Table 14. Size, scope, accuracy and structure aspects can to be considered when utilizing service blueprint for organizational processes visualization of an IT company.

Action intervention stage of research revealed that it is inconvenient to present process visualization when it did not fit into a PowerPoint slide or an A4 sheet. Moreover, the interest of the target audience is more difficult to catch when one cannot see the visualization properly. Furthermore, the audience was confused which parts to concentrate at and was not able to grasp the entire picture at a glance. Therefore, the final version of the service blueprint was fitted into the main blueprint that is easily shared and introduced to the stakeholders.

Table 14. Learnings about service blueprint for visualization of organizational processes in an IT company.

| **Aspect** | **Service blueprint learning** |
|---|---|
| Size: | fit into presentation materials |
| Scope: | support understanding for target audience |
| Accuracy: | provide details on the level required and accepted by the audience |
| Structure: | adjust method to introduce value |

Accuracy of the service design method influenced the amount of information the visualization contains. An extensive scope could make it difficult to focus on certain activities and their analysis. Similar difficulty was faced when the visualization contains excessive amount of details. Thus, the scope of the visualization can be defined so that the target audience could have full understanding of the process and will be able to have further discussions based on the visualization.

Also, the level of detail in the service blueprint had to be reduced in a way that the purpose of service blueprint is met and the audience is not confused. The workshop revealed that a detailed process that visualized each action of the whole

service delivery process was difficult to understand for the audience. For these reasons, main service blueprint was created with less detail targeting all units of the organization. Alongside with the compact version of the process, a smaller scope with more details was realized in sub-blueprints that targeted employees of the units involved in those phases of the service.

The feedback received about the participatory workshop after the action intervention phase was regarding the scope of the workshop. Naturally, the service blueprint presented in the workshop was defining the scope. The scope of the study was originally defined based on the solution modules related to one of the software development teams. Nonetheless, the case study revealed that the scope of service blueprint could have been even narrower. The organized workshop was focusing on three software modules and it was slightly confusing for the participants to generalize all three or talk about each of the modules separately in turns. Furthermore, not all participants had experience with all of the software modules, thus they could not have participated in all of the discussions fully.

Fourth finding from the empirical study was that the original structure of the method complicated recognition of the main message during the case study, thus it had to be adjusted to introduce value. As a result, updated service blueprint had to be adjusted so that the main version of it showed no customer actions. Customer actions were introduced in sub-versions of the blueprint for deeper understanding of a process.

### Service blueprint or another method

One of the main goals of the empirical study was to visualize the internal process that involved creation of the service for the customer from the beginning until the end of the relationship. Furthermore, the special focus was on the internal stakeholders, their communication and collaboration. According to the

quantitative data and open feedback, service blueprint had positive influence on communication and collaboration of the internal stakeholders.

On the other hand, Tassi's categorized set of service design methods [16] also suggested touchpoints matrix as the second suitable option for this empirical study. If this method was used in the empirical study, there are many actions that would be visualized similarly, but there would be meaningful differences as well.

In Table 16, touchpoints matrix is reproduced based on the main service blueprint of the current company process. Another service design method is tested in order to conduct comparison analysis whether the author succeeded in the selection of the suitable service design method for visualization in this case study. This analysis also provides the reader an understanding how service method selection affects the representation of the findings.

Table 16. Touchpoints matrix recreated based on the main service blueprint of the case organization.

| | **Main user actions / intentions** | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| **Touch-points with units** | Mee-tings | POC or pilot agree-ment | Mee-tings | Speci-fica-tions work-shop | Confi-gura-tion emails | Tes-ting work-shop | Recon-figura-tion emails | Issue, task, etc | Up-sales, case, bug | Data deli-very |
| **Sales** | x | x | x | | | | | | x | |
| **PS** | | x | x | x | x | x | x | x | x | |
| **CURE** | | | | x | | x | | x | x | x |
| **KM** | x | x | | x | | | | x | x | |
| **Other** | | | | | | | | | | x |

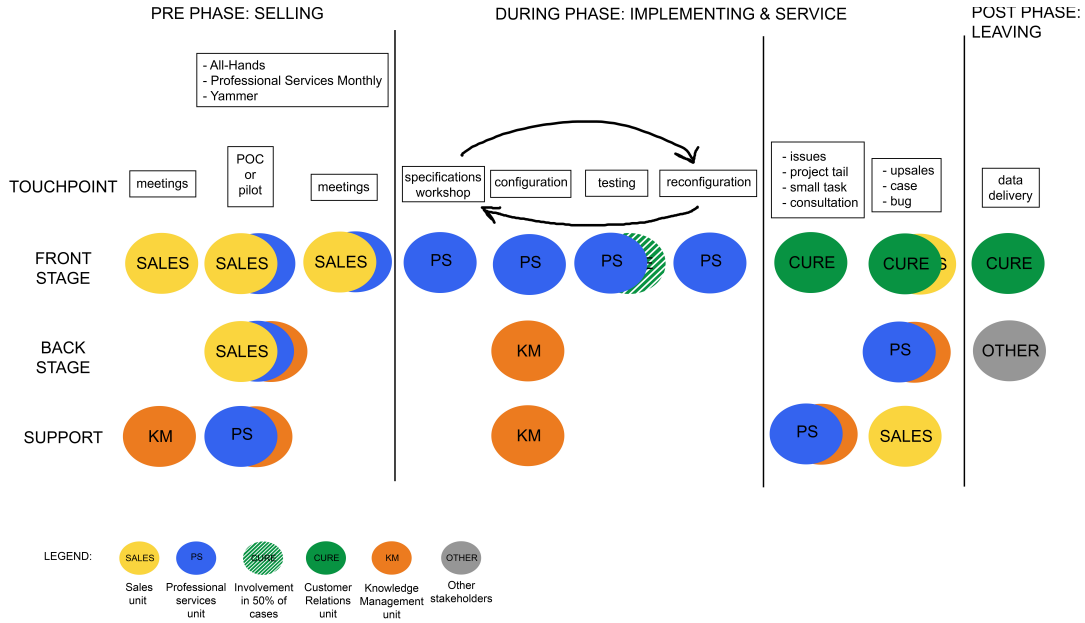


Figure 14. Main service blueprint of the case organization.

Looking at Table 16 and Figure 14, it can be concluded that the two service design methods serve different main purposes. Touchpoints matrix describes customer steps and interaction according to certain user persona, and service blueprint introduces all involved stakeholders of the process depending on their role [15]. For this empirical study, visualization of all stakeholders involved into the service delivery process provided more benefit for improving communication and collaboration of internal stakeholders in a company. Based on this comparison, it can be confirmed that selecting service blueprint as visualization method for this empirical study provided more valuable information for the main purpose of this thesis.

## Learnings about participatory workshop

"Has been good to hear opinions from people from other teams."

Workshop participant

There has been a lot of feedback received about the organized participatory workshop. As the quote from the workshop participant states, people enjoyed discussions across units and hearing opinions of other employees.

The received feedback about the workshop was almost fully positive. Participants mostly liked the workshop for open discussion between various internal stakeholders. Open discussions made company processes more transparent to the participants, since the participants were able to share details about their processes and experience related to their tasks. Root causes for some issue were tracked due to ability to listen to the accurate processes of several employees.

Also, the feedback was received from colleagues who had seen the workshop from the side. They shared that the workshop had seemed very successful and the participants had looked strongly committed and passionate. This kind of feedback came from four persons that have not participated in the workshop, but felt like sharing their impressions with the facilitator.

Passing by colleagues also mentioned that the participants of the workshop had been talking a lot, and the facilitator observed the same. There were many discussions and it could be stated that the workshop was successful in supporting communication and collaboration of internal stakeholders. The representatives of different units were open about the problems and debated on those constructively. However, several aspects of participatory workshop could be improved based on the empirical findings to increase its benefits for organizational processes improvement. Three learnings about participatory workshop are presented in Table 15.

Table 15. Learnings about participatory workshop for improvement of organizational processes in an IT company.

| Aspect | Details on participatory workshop learning |
|---|---|
| Engagement: | select carefully location and activities |
| Schedule: | plan event for maximum length of 2 hours and scheduled breaks |
| Focus: | align the content with the workshop participants, and vice versa |

Engagement, schedule and focus are aspects that had to be considered closely in participatory workshop preparations for improvement of internal processes in an IT company. Engagement relates to the location and activities that will influence the collaboration during the organized session. The organized participatory organization in a case organization was successful in these two aspects, which positively affected overall environment of the event and facilitated communication and collaboration between the participants.

Schedule was found to be an important element of workshop. Long session and no breaks had negative effect on the workshop participants. Based on the findings from action intervention, it is suggested to organized organizational process improvement workshops no longer than 2 hours. Indeed, one scheduled break or two will have a positive effect on the workshop participants, since they will be have enough energy to participate in the dialogue and the activities scheduled into the event program.

Workshop content and participant group should be aligned, because a mismatch of these would reduce engagement and the results of the participatory workshop. This kind of alignment between content and participants can be considered as the focus of the workshop. The empirical study revealed that inviting everybody for workshops with the purpose of the process improvement might bring communication and collaboration difficulties.

Direct involvement with the processes and interest for process improvement could have been used as participant selection criteria for workshops of such type.

The participants should understand content presented during the workshop, therefore sometimes the workshop content could define the participant group.

## 4.4. Summary of empirical study

Empirical study consisted of three stages, where each of them was concluded with the analysis based on the gathered data. Problem diagnosis provided an in-depth understanding of the current internal process of the case company. Based on 36 interviews the current process was visualized by utilizing service blueprint as a basis for the visualization.

The blueprint was further presented in the participatory workshop organized in the action intervention stage of the study. Feedback on the process visualization as on the applied service design methods was received from the workshop participants. Last stage of the empirical research – reflective learning – applied gathered learnings to propose improved process visualizations and to reveal aspects that require special attention when used for purpose of visualizing and improving organizational processes of an IT company.

Conducted empirical study resulted in four visualizations that describe the current company process of service delivery. One of the visualizations – main service blueprint – is targeted to the broader audience and provides an overall process understanding for all units of the organization. The rest of the visualizations contain more detailed aspects of internal processes and would be suitable for targeted audience. One more internal process prototype had been created based on the gathered improvement ideas from the company employees. This new internal process proposal is supported by six concrete actions to improve communication and collaboration of internal stakeholders in a growing IT organization.

Reflective learning stage also provided analysis of the applied service design methods and their effect on improvement of communication and collaboration within the organizational units. These resulted in learnings regarding both service design methods for future use in the same purposes.

# 5. Discussion

## 5.1. Service design methods for organizational processes

Based on the previous chapters of this research, the author provides answers to the first research question:

***RQ1: What service design methods can be applied to visualize and improve organizational processes of an IT company?***

The answers are divided into two chapters service design methods for visualization and service design methods for improvement, thus providing detailed analysis of both methods in each chapter.

### Service design methods for visualization

Literature review was conducted in order to discover service design methods for visualization. The existing literature suggested plenty of service design methods, thus it provided several options for selecting a suitable service design method for visualization. In this thesis, Tassi's categorization of service design methods was applied to select suitable visualization method [15]. The benefit of Tassi's categorization was seen in a broad set of method selection criteria [15]. There is also a possibility that by choosing a different categorization of service design methods, the researcher would have a slightly different set of options to choose from.

A suitable service design method to visualize organizational processes of an IT company can be expected to fulfill four criteria. These criteria are graph representation, suitability for implementing activity of the design process, targeting all stakeholders of the service, and interaction content. Based on the literature review, these criteria were fulfilled by service blueprint. Service

blueprint is a visualization method [19] that reveals all functions and activities that relate to the service creation and management [20].

In addition, the empirical study revealed four aspects to consider when applying service blueprint to visualize organizational processes of an IT company. Size, scope, accuracy and structure of service blueprint require a special attention in utilizing this service design methods for process visualization purposes.

The first version of the service blueprint turned out to be too detailed and difficult to communicate. Thus, the case company was provided with the main blueprint and its detailed sub-versions. As mentioned by Bitner, Ostrom and Morgan, the purpose of the main blueprint is to create a common picture that all stakeholders involved can rely on [4]. Similar solution was provided for the case company in this research. Concrete aspects of service blueprint that can be considered in visualizing organizational processes of an IT company are explained further.

The conducted empirical study revealed that the service blueprint size could influence the interest of the audience and the easiness of sharing and introducing the blueprint to the audience. Therefore, the size of the service blueprint could be adjusted so that it could fit into a PowerPoint slide or an A4 sheet.

The scope of the blueprint can influence audience's deep understanding, which means the ability to apply the received knowledge in the daily work, communication and collaboration between organizational units. The limitation to one software department was applied in the study. However, the results demonstrated that the scope could have been even narrower.

The empirical findings indicated that the service delivery process was demonstrated too accurately. The amount of information can be reduced in a way that the purpose of service blueprint is met and the audience is not confused. Therefore, the main blueprint did not contain all the actions in the process. Bitner et al. also specified that sub-versions of the main blueprint could be

delivered in the level of detail desired and needed for the department that the visualization is communicating to [4]. Relying on the empirical findings and the existing literature, main and sub-versions of the blueprint contained different amount of detail.

There were different interpretations of the blueprint found from the existing literature [1:206-207; 4; 17]. Based on that, support was chosen as the last horizontal line of the blueprint to focus on internal communication and collaboration of an IT organization. Also, despite the importance of the user-perspective in service design, it was considered to remove customer actions from the main service blueprint structure. The reason for that was that the main blueprint had to be light enough so that all internal stakeholders could gain understanding of the company internal process.

The existing literature sets no strict rules for utilization of the service design methods [1:148; 14], and one of the lessons learned from the empirical study was that the method structure could be adjusted to introduce value to the target audience. Based on the literature review and the empirical findings, the changes to the final version of the internal process blueprint were made.

### Service design methods for improvement

According to the literature review, all service design methods are facilitating creation or improvement of the service [1:31-32]. The methods are usually selected according to the case and could be adjusted if needed [1:148; 14]. This thesis aimed to find suitable service design methods to improve communication and collaboration of internal stakeholders of the organization.

In this study, participatory workshop was selected to create co-creation for the company employees. According to the empirical results, participatory workshop successfully supported communication and facilitated collaboration between internal stakeholders. Also the literature suggested that participatory workshop,

also known as design workshop, is beneficial for an organization as it provides collaborative approach and feedback opportunity [22; 23]. Participants tend to share personal experiences during workshop and are able to provide valuable insights on the issues related to their past experience [22; 23]. Similar behavior of the participants was observed during the empirical study.

The existing literature introduced recommendations on preparations, activities and facilitator role to organize a successful participatory workshop. Preparations include switching off the devices,

The empirical study also revealed that there were several aspects of participatory workshop that can be considered in improving organizational processes of an IT company. Such aspects as engagement, schedule and focus can have influence on healthy communication, which means that all participants have equal amount of listening and talking in the discussions, and understanding between the participants is reached.

Furthermore, the empirical study gathered three learnings on the aspects to be considered when planning a workshop for organizational process improvement purposes. Firstly, engagement is an aspect that could be manipulated by selecting suitable workshop location and proper activity program aligned with the purpose of the event. Secondly, schedule proved to be important in the case study. The suggestion was to have shorter session with breaks. Thirdly, focus involves proper alignment of the content and the audience. For instance, if the content is targeted to the wrong audience, no valuable insights will be gained during the workshop. Therefore, a deep analysis of the participant group suitability has to take place.

## 5.2. Improving communication and collaboration

Based on the previous chapters of this research, the author provides answers to the second research question:

***RQ2: How service design methods support communication and collaboration of internal stakeholders?***

Positive survey results suggest that service design methods positively affect communication and collaboration of internal stakeholders in a growing IT organization. The empirical findings correspond with the literature review that there are organizational benefits from service design [1; 2; 3; 4; 5].

The empirical findings revealed that service blueprint and participatory workshop can succeed in providing deep understanding of the service delivery process in a growing IT organization. Furthermore, providing deep understanding to the internal stakeholders of a company does not only mean creating visibility of the process. In this context, deep understanding also means the ability to apply the received knowledge in the daily work, communication and collaboration between organizational units. Deep understanding of the customer is also revealed as a service design goal in the existing literature [1:34-35].

In the empirical study, service blueprint presented which units communicated and collaborated at various stages of organizational process as a visualization of a sequenced process. The existing literature review presented that service design is holistic and sequencing [1:44-45; 7:37-38], and these features of service blueprint were also introduced in this thesis.

Common understanding of the service delivery process across the organization might be difficult to reach in a growing organization due to the amount of newcomers in the company. Service blueprint and participatory workshop supported visualization and improvement of organizational processes by

providing common understanding of the service delivery process. The existing literature also stated such benefit of service design methods [1:34-45; 2:97]. Internal stakeholders were able to gain common understanding on the internal processes as well as see the big picture of the service delivery process for the customer.

The case company, as a growing IT organization, had difficulty to keep up with the up-to-date training materials. Another challenge was rapid integration of the newcomers into the organization and their tasks. Therefore, main and sub-versions of blueprints can be supportive materials for internal introduction and trainings. The newcomers can fit into the company culture and have overall picture of the company process, the structure of the organization, and collaboration between different units. The case company of this thesis had already started utilizing service blueprints for introduction of internal process and the role of the new employees in the service delivery process.

Service blueprint and participatory workshop were found to be suitable methods for organizational processes improvement. In the case study, service blueprint provided a starting point for the discussions during the workshop. Furthermore, one of the organizational benefits of service design revealed by the literature review was improvement of organizational processes [2; 5]. It was a result of another organizational benefit – visualization of the service as a sequenced process [1:40-41; 3; 4]. Such visualization provided visibility on the processes. Visibility eased communication between the internal stakeholders and provided basis to start collaboration on the improvement of the existing service or its delivery process during the workshop.

The empirical study showed that participatory workshop can create an environment where daily activities and experiences of the employees were shared and internal stakeholders learned from each other. The literature review also presented similar findings [22; 23]. In this study, through deeper understanding of the organizational processes with the help of service design

methods, the workshop participants were able to address pain-points of internal collaboration in the organization and analyze improvements for the processes.

At some point a growing IT organization is in the phase when there are a lot of employees and people do not meet so often anymore. The case organization is currently in this phase, and it starts to be more challenging to communicate and meet people from different units. In such cases, service blueprint can provide needed information for the communication, and participatory workshop can allow having collaborations between the teams and experts.

### Comparison to software process modeling objectives

This empirical study suggested service blueprint as a method for organizational process visualization of an IT company. The process described presented the whole life cycle of the service, starting with the creation of the software solution for the client until the end of their relationship with the service provider. In this study, service blueprint focused on represented when, what and who is involved in the solution creation and management. In addition, a customer perspective was included into the process visualization.

Comparing to the literature from 1992, there could be some similarities and differences found in the process visualization in a software organization. Software process modeling was believed to present only few perspectives at time, for instance, when and how process is performed, or where and by whom [26]. However, no evidence of including customer perspective in software process modeling was found. In 1992, Curtis, Kellner and Over concluded in their research that software process modeling still had to be developed further [26]. However, the researchers concluded that there were five objective categories for software modeling process, including facilitating human understanding and communication [26].

25 years ago the researchers found the goal of the process visualization was to increase understanding and facilitate communication regarding software processes [26]. The benefits of software process modeling also included increasing effectiveness of collaboration, information sharing and performing as training material [26]. Respectively, these are the benefits service blueprint introduced for the case company in this empirical study.

Since there was no perfect process representation method in 1992, service blueprint can be considered as one of the visualization methods that the researchers were looking for in the past. Even though the stress of blueprint is on the service development, it takes into consideration all important aspects of software process, therefore being a suitable method to improve communication and collaboration of internal stakeholders in an IT organization.

## 5.3. Limitations of the study

Service design methods are expected to provide deep understanding of customers, service provider and entire service environment [1:34-45; 2:97]. However, this research has been conducted within limited time, thus the focus of this study was primarily on communication and collaboration of internal stakeholders. That is why it would be valuable to conduct a research with the closer involvement of the customers and the external stakeholders. The process visualization outcome could vary as well as the improvement ideas related to that, since there are more stakeholders participating in the communication and co-creation of the improvements.

Only one software development unit from the case organization was involved in the empirical study. In order to gather a full picture of the organizational process of the IT company another software development unit should have been taken into account. The current process only visualized half of the processes that company has in place. From another perspective, the scope for the organizational process could have been defined by one of the solution modules the company

provides at time. It could have provided a more detailed process related to the particular module, thus the communication during the workshop would have been more focused.

Also, this empirical study had one iteration. Therefore, the learnings about service design methods were not applied in the scope of this thesis. A long-lasting research could have revealed an actual influence of the applied service design methods on communication and collaboration of internal stakeholders and improvement of organizational processes in a growing IT organization.

## 5.4. Proposals for future work

In the future work it would be interesting to investigate how the visibility of the customer can be approached in the general visualization of organizational process. In this thesis, the challenge between clarity and informativeness of the service blueprint was faced. One of the core design thinking principles is user-centricity [1:34-35], therefore in this empirical study customer actions were only removed from the main service blueprint and remained in its sub-versions.

It would be interesting to follow which of the improvement ideas were implemented in the case company. There were also many discoveries in this thesis about service blueprint and participatory workshop that could be investigated further as further research works. These discoveries include process visualization use for internal training, improvement of the entire service, and increased satisfaction of employees and customers.

Furthermore, a research for the second software development unit would allow improving another organizational process of the case company that overlaps with the one analyzed in this study. As a result, entire company process visualization would be created and the benefits of service blueprint utilized further in the case organization.

# 6. Conclusions

The objective of this research was to investigate how to improve communication and collaboration of internal stakeholders in a growing IT organization. A special focus was on the selection of service design methods that would visualize internal processes of the organization and encourage improvement within the company. Also, the focus included evaluating how these methods support communication and collaboration of the internal stakeholders.

The proposal of service design methods that can be suitable to improve communication and collaboration of internal stakeholders in a growing IT organization was based on the literature review. Furthermore, the benefits of the applied methods relied on the empirical findings of this thesis. According to the conducted work, two key conclusions of the thesis are presented further.

The results of the thesis indicate that **service blueprint and participatory workshop can provide deep understanding of the service delivery process across the organization.** Service blueprint is a method that visualizes service as a sequenced process introducing all stakeholders involved into the service creation and management. Through sequenced visualization, common understanding of internal processes can be reached across organizational units. Various internal stakeholders can see the big picture of the service delivery process and they are able to communicate internally referring to the same activities and processes. Participatory workshop can be used to create an environment of understanding and transparency by gathering various stakeholders together at the same time to facilitate cross-functional communication and collaboration.

Findings of this thesis also suggest that **service blueprint and participatory workshop can be suitable methods for improvement of organizational processes.** Participatory workshop is a valuable method if an environment to support the communication between cross-functional teams has to be created.

Service blueprint provides a starting point for the communication and the visibility on the internal processes. Workshop participants are able to share experiences and their views on the same subjects. As a result, such workshop collaborations can lead to concrete improvement actions of the internal processes.

In the future it could be investigated how the visibility of the customer can be approached in the visualization of an organizational process. Furthermore, to provide a complete picture of the entire internal service delivery process of the case company, another research can be realized focusing on the second software development unit. It would be also interesting to follow which of the improvement ideas were implemented in the case company, however a longer study would be required for that.

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# Appendix A

## Interview questions

**Current process**

- Can you, please, explain the process starting from your first contact with the customer until your relationship ends?

**Guiding questions**

- How do you first meet the customer?
    - What is you first interaction with the customer?
    - Can you explain it step-by-step?
- Why the customer is in contact with you?
    - What happens prior to that?
    - What are the ways for customer to eventually meet/work with you?
- What does customer see about the company/service at each stage?
    - What action?
    - Who is working directly with the customer?
- What things do you do that a customer sees?
    - Are there cases when you interact with the customers directly?
- Where customer has an actual connection with the company or its solution?
    - When customer is in contact with the company?
- What has to be done at this stage that a customer does not really know about?
    - Are there some tasks or activities that happen at the backstage?
- What things do you do that a customer does not see?
    - When, with whom?
    - How do you contact other teams to do such changes?
- Whose help from Sievo is needed at this point? Why?
    - How do you ask for support?
    - Which channels are used for that?
    - Whose help would be good to receive?
- How much interaction and when is done with:
    - Sales? Professional Services? Customer Relations? Knowledge Management?
- How does the Hand-over to Professional Services/Customer Relations happen?

- When and how much do you participate in
    - Sales process?
    - Project implementation?
    - Continuous service (CuRe)?
- How do you support this team in this task?
- How are you asked for the support?
- Who else is in the frontstage when this happens?

**Improvement ideas**

- Where in the process communication and collaboration work best?
- Is there a pain point somewhere in the Sievo process from the viewpoint of communication and collaboration between teams?
- Where in the process would you change/improve things? How?
- How would you want to participate in the process?
- Is there anything else that you would like to add?

# Appendix B

## Critical feedback

How well the visualization of the internal process supported the discussion during the workshop?

| 1 | 2 | 3 | 4 | 5 | 6 | 7 |
|---|---|---|---|---|---|---|
| Not at all | | | | | | A lot! |

How much did you learn about company's internal process from the visualization?

| 1 | 2 | 3 | 4 | 5 | 6 | 7 |
|---|---|---|---|---|---|---|
| Not at all | | | | | | A lot! |

What has been good about the process visualization? What would you improve/change in the visualization?

How well the workshop supported collaboration of the attendants?

| 1 | 2 | 3 | 4 | 5 | 6 | 7 |
|---|---|---|---|---|---|---|
| Not at all | | | | | | A lot! |

What has been good about the workshop? What would you improve/change in the workshop?

What did you like most/least today?

How could these methods (blueprint, workshop) improve communication and collaboration at Sievo?

# Appendix C

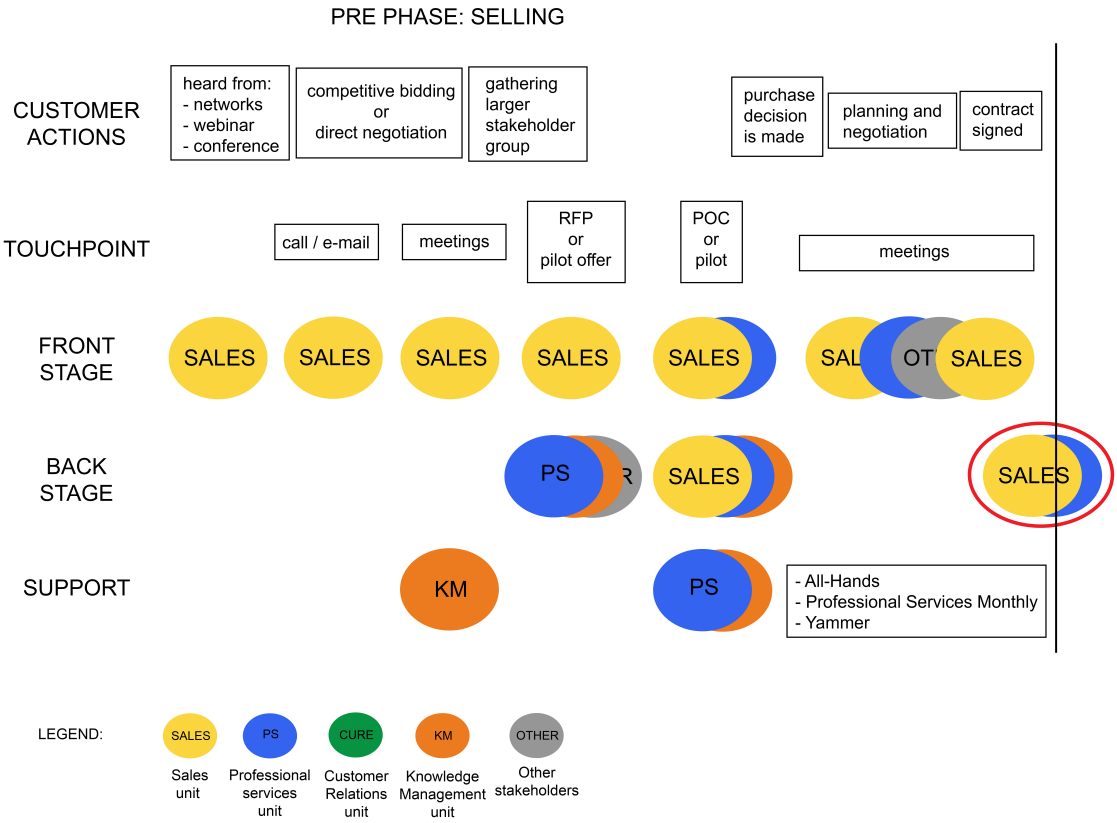


Figure 15. New detailed process of selling phase with proposed improvements of the internal process.

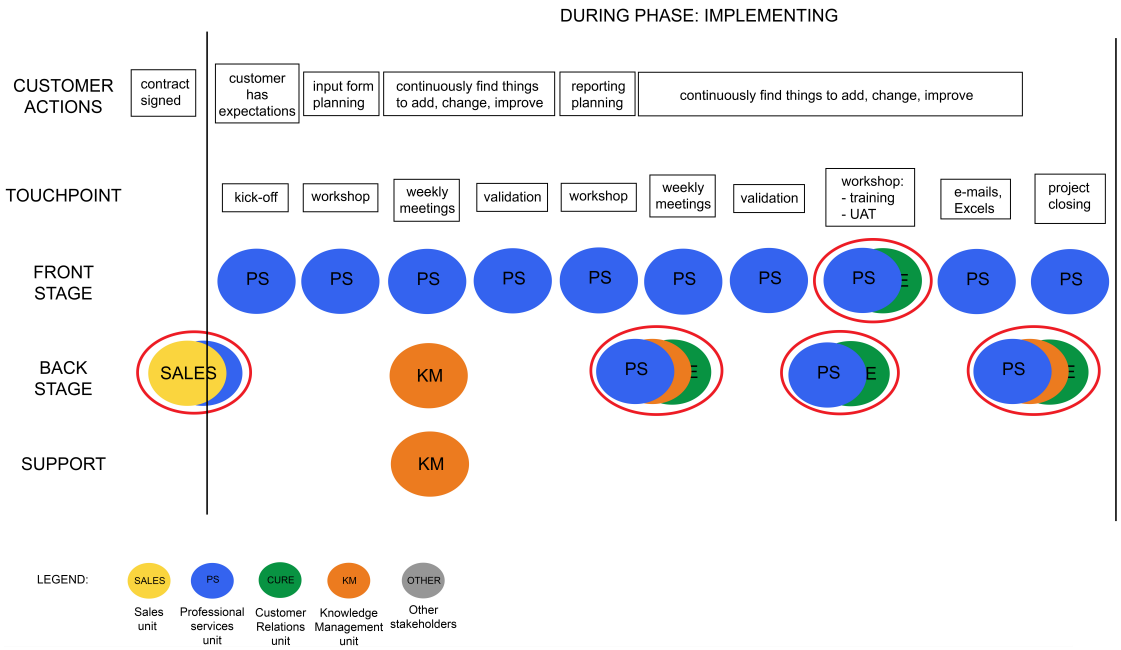


Figure 16. New detailed process of implementation phase with proposed improvements of the internal process.

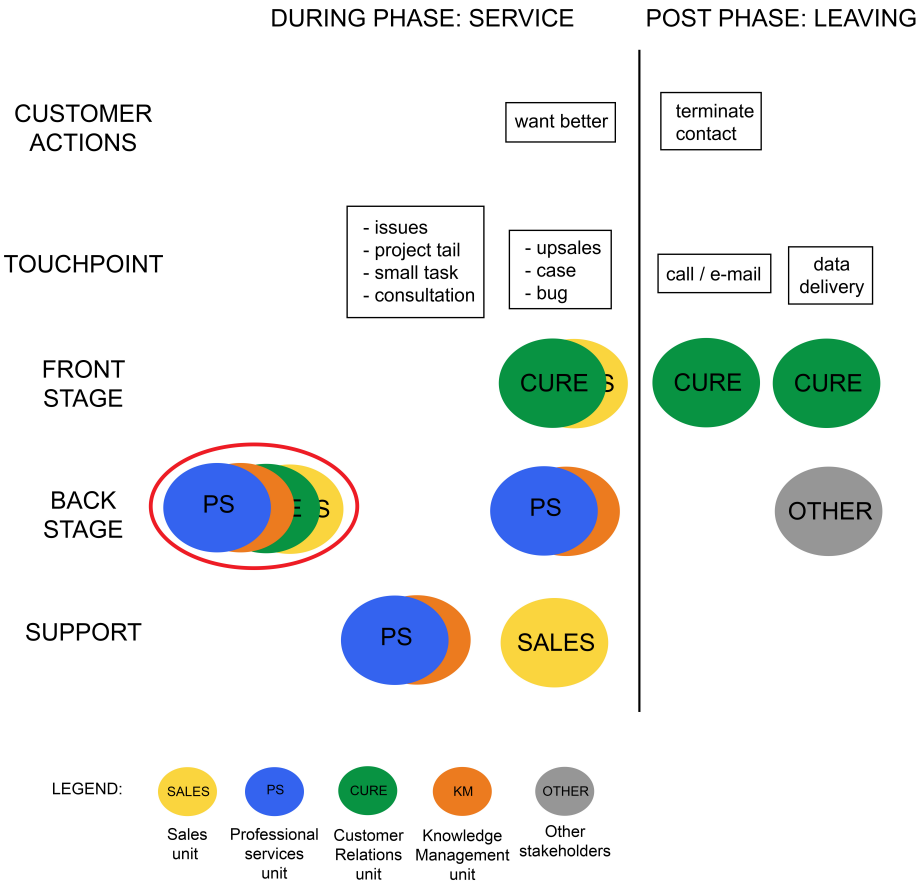


Figure 16. New detailed process of service and leaving phases with proposed improvements of the internal process.